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LAFAYETTE BLOOM SCHOOL, CINCINNATI, OHIO. Garber and Woodward, Architects.

A fine example of a school in Italian Renaissance. Note the tile roof with wide projecting eaves, also the arcades and arched windows. The open space on the top story of the two wings are roof playgrounds. The center portion of roof being uncovered while along the sides it is roofed over to give protection from hot sun and in rainy weather. This is a very fine arrangement.

Architectural Styles as Applied to School Buildings

James O. Betelle, of the firm of Guilbert & Betelle, Newark, N. J.

Now that our thoughts are being directed to the construction of the much needed new school buildings, let us give a little more thought to the style of architecture to be used on the exterior of the buildings. Only in this way can we hope to improve upon the commonplace buildings which are now so plentiful thruout the country. The importance of giving the floor plans a great deal of thought and study in order to arrive at the best results is pretty well appreciated, but the style of the exterior has not been so carefully considered. It is quite possible to design a school building which, taken by itself, would be attractive and beautiful, but still inappropriate to its surroundings. That there is a lack of knowledge on the part of school boards and school superintendents regarding the different styles of architecture which can be used in school buildings, and their proper use, is clearly shown by the many inappropriate and ill-adapted schools located in all parts of the country. It is with a view of explaining and illustrating in a brief way the various architectural styles as applied to school buildings that this article is being written.

Architects use a number of different historical styles in the buildings they design, none of which are exact copies of the old examples—the old examples are used as a basis for modification and adaption to meet present day requirements. The style adopted for any school should in the

first place be appropriate for a school building, and in the second place be appropriate for the place in which the school is to be built. Selecting a style of architecture for a school is quite

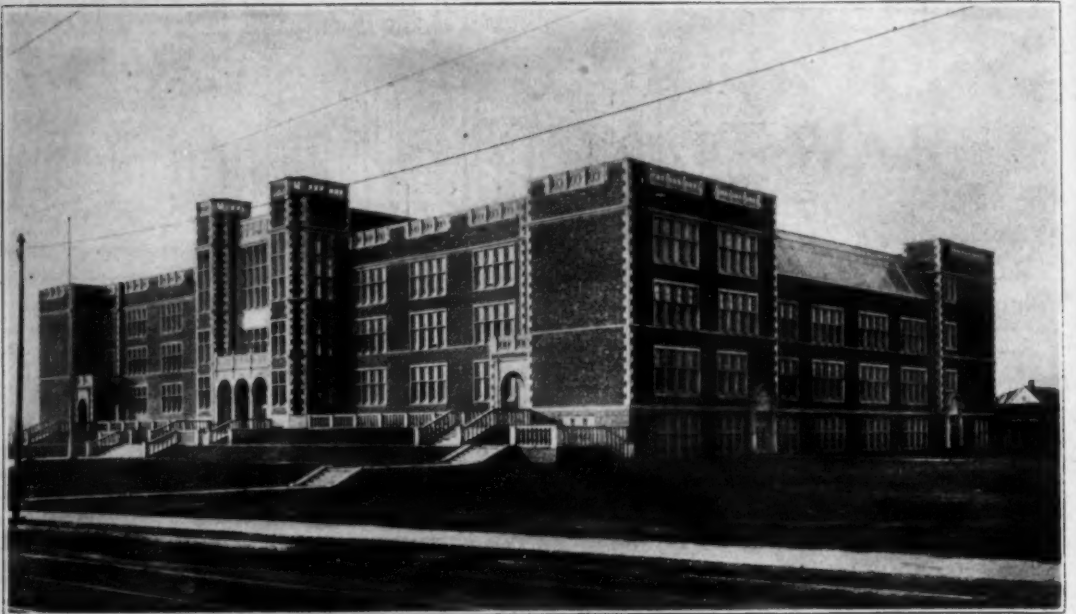


SCHOOL HOUSE AT FRAMINGHAM CENTER, MASS. Charles M. Baker and Stanley B. Parker, Architects.

Another fine example of Colonial architecture by the same architects as the school at North Easton, Mass. This building is somewhat larger than the North Easton school, and one typical Colonial feature not in the other building is the large double chimney on each end of the main roof. These are undoubtedly ventilating ducts from the various classrooms.

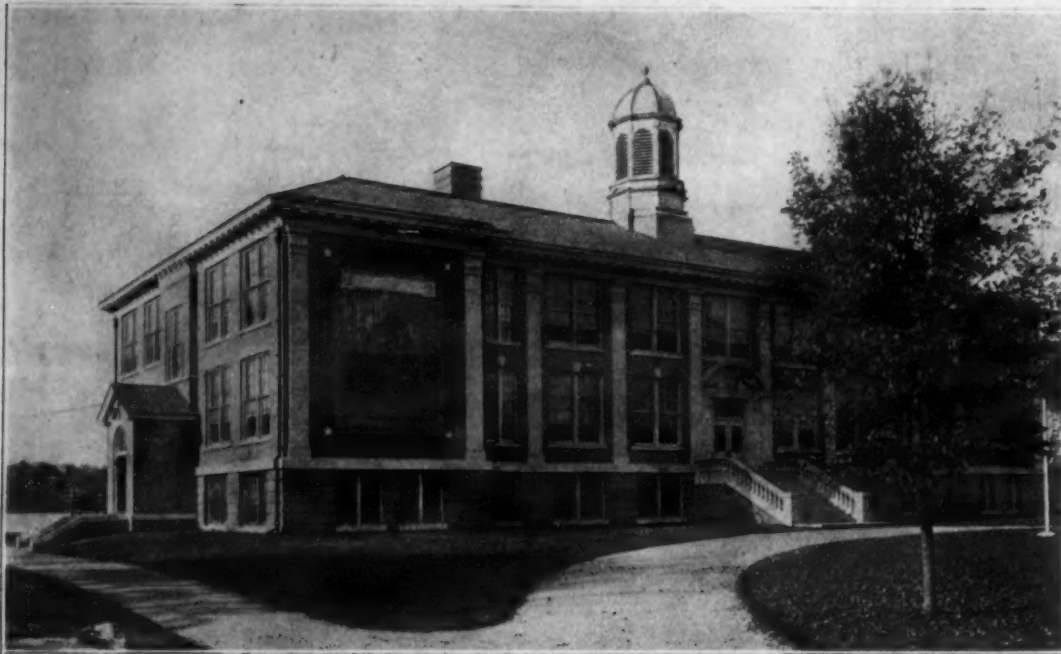
different from selecting a style for one's home. Personal preference usually decides the style of architecture used in the house in which we live, while there are many limiting conditions as to the style appropriate for a particular school. A school may be located in a part of the country or in a city where there are no limiting conditions, in which case one may exercise a free choice. Even then careful consideration should be given the style, so as to properly influence future buildings of the town and to make the school a model of good taste, not only in its educational program, but in the building as well. Right here it may be well to make plain that to give a building *architectural style* does not necessarily mean to make it more expensive or to add unnecessary and excessive ornament. It means first of all the exercise of good taste, and that the architect designing the building shall be a person of education and training in his profession. All of the different styles have a distinctive general outline in the mass of the building,—the size, shape and spacing of window and door openings, etc., so that a building may be extremely simple, yet be a good expression of a definite architectural style.

In a small town in New England, or in the South, where there are colonial traditions and



CENTRAL HIGH SCHOOL, MINNEAPOLIS, MINN. W. B. Ittner, Architect.

This is an illustration of a High School in one of our large cities. It is an example of Collegiate Gothic or Jacobean Architecture. Note how simple the building is in outline and detail, and yet it has all the characteristics of the style. The long glass sloping roof on the top story on side of the building contains the Drawing and Art Rooms and being on the north side of the building, provides ample light of proper kind for this important work. On the opposite or south side of the building are two greenhouses built in connection with the Biological Laboratories and Plant Study Rooms. Altogether this is a very satisfactory building with the minimum amount of elaboration for its size, and consequently economical.



COS COB SCHOOL, GREENWICH, CONN. Guilbert & Betelle, Architects.

A Colonial type of building with the typical high pitched roof, cupola, classical doorway, etc. The cupola is not only an ornament but it is made use of for emptying all ventilating flues from the various classrooms.

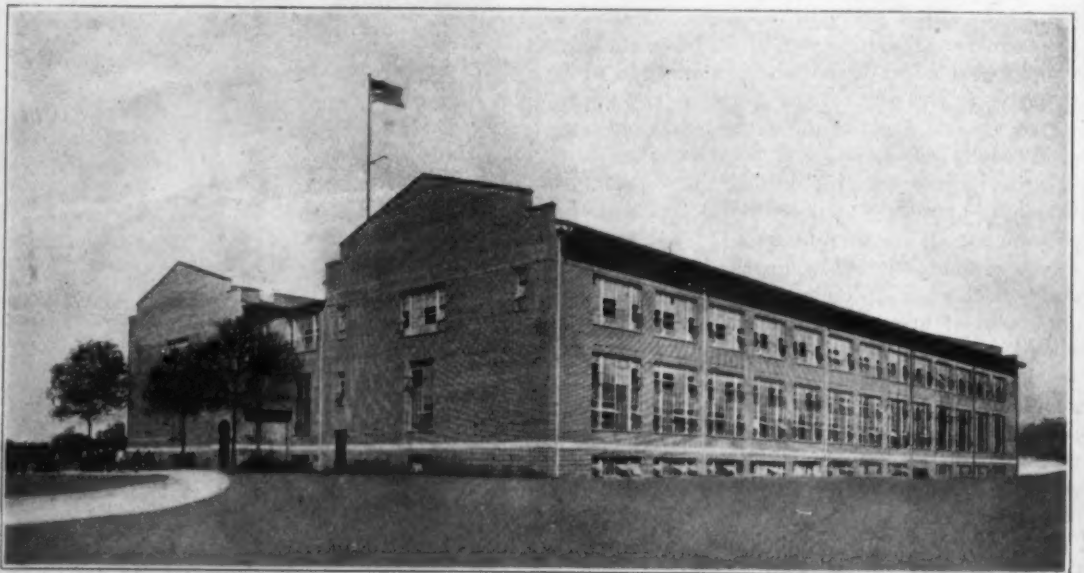
where many homes and other buildings are built in the colonial style, the choice is already made. It would be distinctly bad taste to place a school of the Gothic or Mission style in such a town. In Southern California, Arizona or New Mexico, where climatic conditions are suitable and the history of the place suggests it, a school of the Mission or Spanish style would be quite appropriate. This style of architecture with its white stucco walls, low pitched tile roofs, southern atmosphere, with palm trees and tropical vegetation, has been made familiar to the traveling public thru the advertisements of tourists' agencies. Therefore the three fundamental considerations in deciding upon the architectural style of a building are environment, local traditions or history, and the climate of that part of the country in which the building is located.

As an example of how environment should affect the style, we can suppose that our new school is to be located across the street or adjoining an important college group or other public buildings. In this case, due consideration should be given to the style used in these existing buildings and the new school made to

harmonize with them. In this way each will enhance the beauty of the other and neither will be a jarring note to detract from the general good effect. Good taste dictates that we should conform in dress and deportment with the habits of the community, and this applies to our buildings as well as to our general behavior.

Local materials can also be used to great advantage, and this always makes for cheapness and fitness. A building constructed of local materials seems to be in better taste and to fit in with the particular neighborhood very much better than a building constructed of materials brought from a distance. From a standpoint of cost in these times of rigid economy, more thought must be given to the intelligent use and appreciation of our local materials.

Most of our small rural schools are anything but appropriate. It seems to be the general opinion that because the building is small and necessarily inexpensive, that it must also be unattractive; that it cannot have any style and that a box-like structure is all that is possible. Our forefathers, the early settlers in this country had to be economical not only in labor and material but also in transportation. No one will claim, however, that their buildings lacked



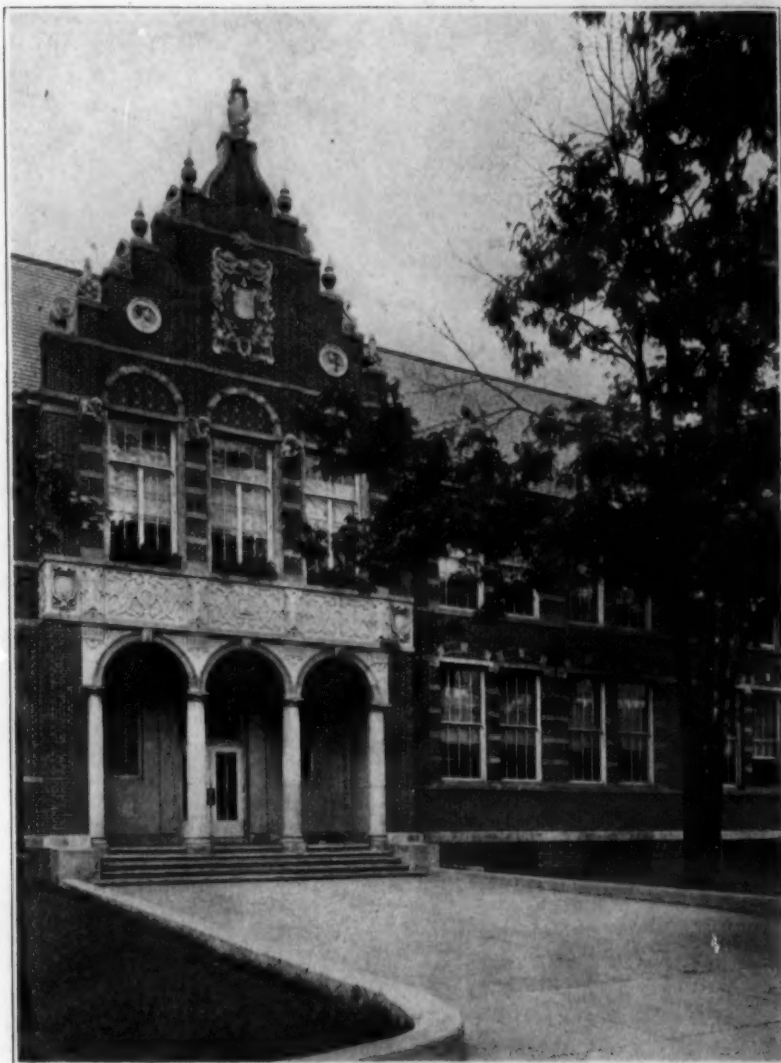
DUNWOODY INSTITUTE, MINNEAPOLIS, MINN. Hewett & Brown, Architects.

This illustration shows the first two sections of Shops which have been built for the Dunwoody Institute. The part containing the Administration and the Academic Work has not yet been built, but will later on be placed against the blank end walls. This building is a good example of a modern factory building, and Vocational Schools will follow very largely this type of exterior. It is built with the maximum amount of light, at a minimum cost, and expresses the purpose for which the buildings are used.



SOUTH SIDE HIGH SCHOOL, NEWARK, N. J.
E. F. Guilbert, Architect.

An example of a Collegiate Gothic Style. Note the pointed arched doorway, and heads of windows, the quoins or irregular projecting stones at sides of windows, the tracery designs in panels, the battlements along top of main wall of building, all these together with shields, canopies, etc., are typically Gothic. See illustration of entrance for better idea of these details. Note that even the lettering "South Side High School" over the windows in the second story of entrance, have been carried out in Old English or Gothic style.



RIDGE SCHOOL, NEWARK, N. J. E. F. Guilbert, Architect.

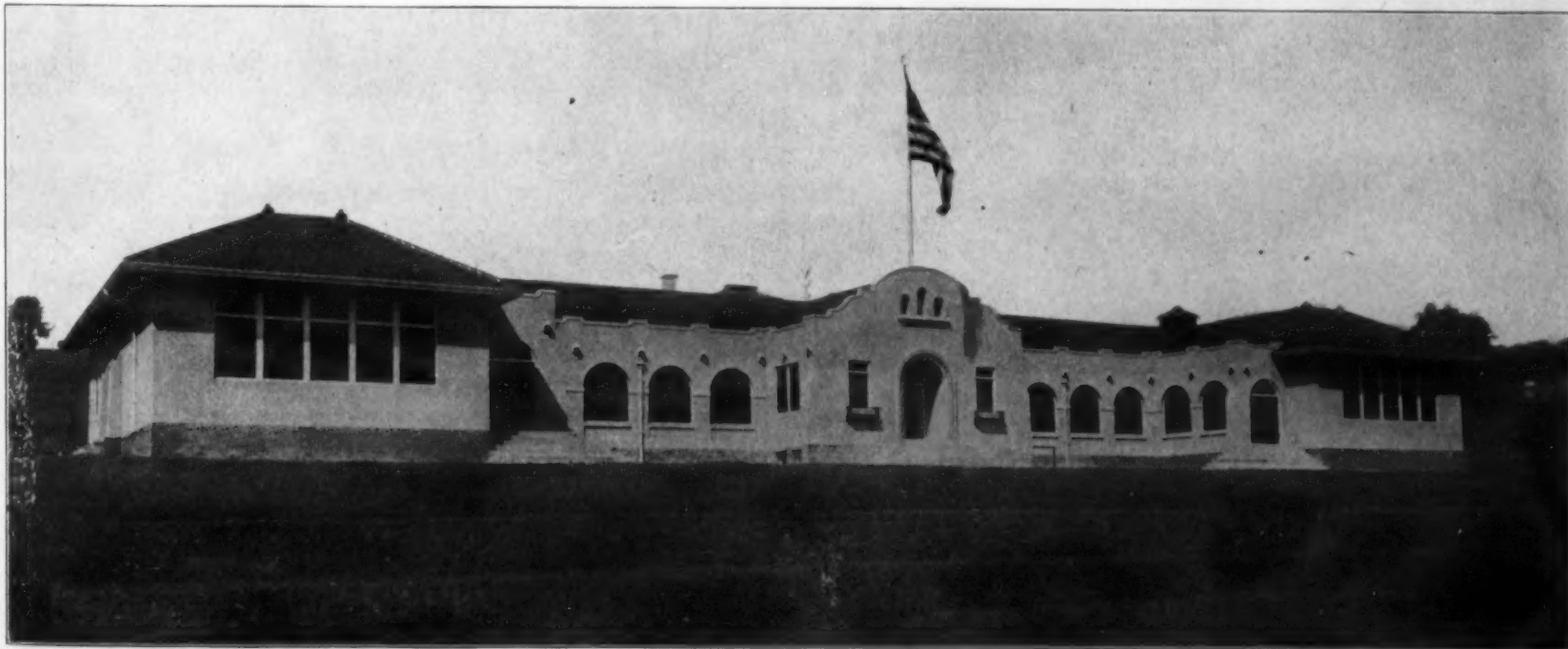
The Flemish style architect is seldom seen in school building. Here is an example and it shows how well the type of buildings from far off Flanders adapts itself to our up-to-date schools. This building is in a high class residential section and is used by practically all the children in the neighborhood. Private schools went out of business when this school was opened. Note high pitched roof, stepped center and gable, alternate stone blocks set in brick work of window jambs, and the relieving arches over the windows. The ornamental iron ends to tie rods, at second floor line between the windows is also typically Flemish.

in either charm or character. By referring to the illustrations it can be readily seen that a small building can be constructed with simplicity and still have a rural quality that is charming. This is again a matter of skill and judgment on the part of the designer. The United States Bureau of Education and the departments of education of the various states are now taking a great deal of interest in the

improvement of our rural school buildings. Pamphlets have been written, improved plans circulated, and great progress is being made in this important field of school construction.

In a location where there are no limiting conditions, the question naturally arises, "What is the best style of architecture for a school building?" It seems to be agreed among architects generally that for a city building a modified

Collegiate Gothic is the style that is best adapted to the larger buildings. This is the style used at Cambridge and Oxford in England, and in many of our newer college buildings in America. This style is not only scholastic in character, but has many other points that recommend it for use in large schools. Anyone can be easily convinced of the popularity of this style by examining the photo-



HIGH SCHOOL, JACKSON, CALIFORNIA. Walter Parker & Co., Architects.

This school is built in the Mission Style and is suitable for Southern California and adjoining states. It would not be suitable for New England and the East.

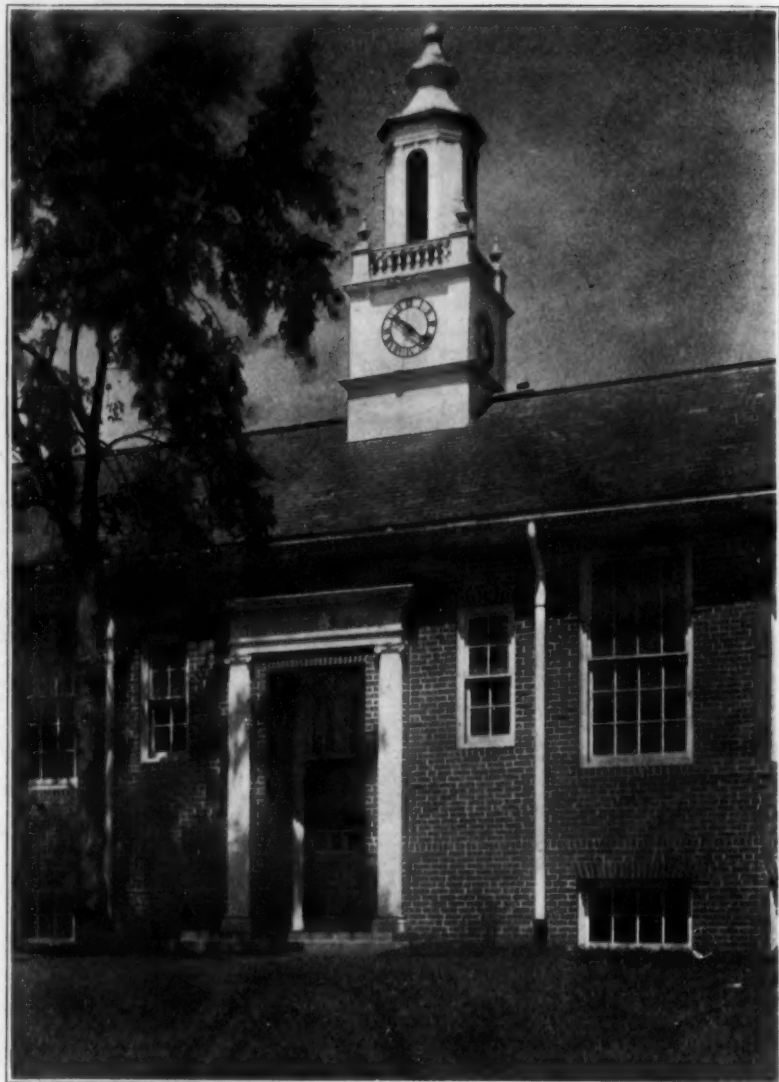


McKINLEY SCHOOL, NEWARK, N. J. E. F. Gullbert, Architect.

An example of Italian Renaissance school, this building is white stucco with inlaid brick and colored tile ornaments. The wide projecting eaves and ornamental supporting rafters are painted in blues, reds and yellows, just like the old Italian examples. The top story windows and glass canopy over same are for the open air classrooms. The open arches of lower story are to the covered Play Court under the building. This school is located in a congested Italian neighborhood and the Italian citizens are very proud of their building.

graphs of recently constructed school buildings. It is safe to say that 75 per cent will be found to be in this style, if the building can be classified as to style at all. There are a number of reasons for this; one being the great amount of window surface to be provided to light the class-

rooms, and the relatively small proportion of wall surface remaining. In the Collegiate Gothic style, windows can be made as high and wide as needed, with only small divisions between to make the sash of convenient size for operation. The windows can be arranged regu-



FISHER SCHOOL, WALPOLE, MASS.
R. Clipston Sturgis, Architect.

This shows the central entrance detail of a most attractive one-story rural school, located in Walpole, Mass. It is a typical colonial building and makes a very important and interesting addition to the buildings of this community.

larly or irregularly, close together or far apart, without detracting from the general appearance or style; in fact, this often adds to the picturesque qualities of the design.

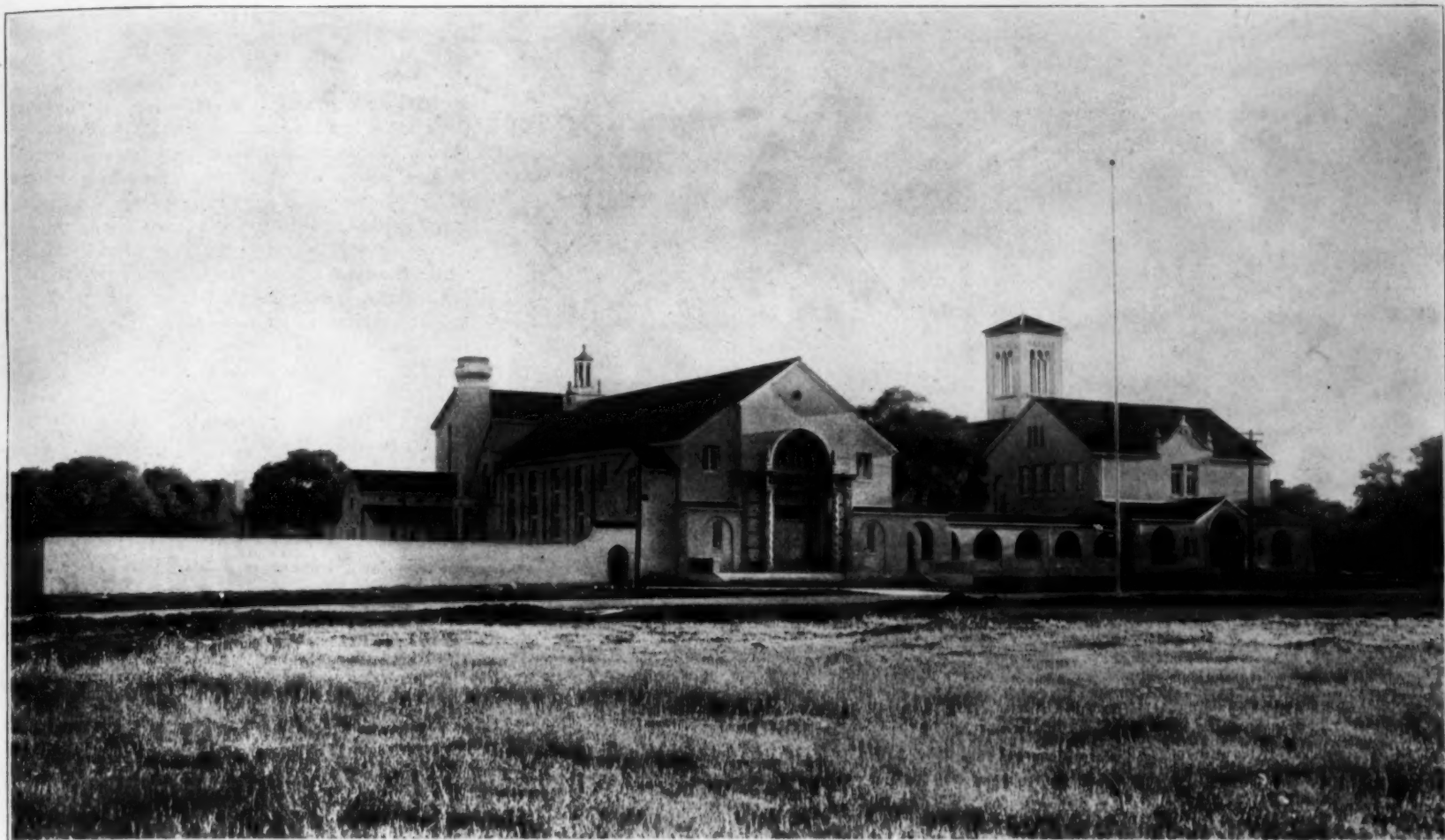
In the Classic or Colonial style, it is neces-

(Continued on Page 75)



HIGH SCHOOL, VAN NUYS, CALIFORNIA. Allison & Allison, Architects.

A fine example of a school in the Classic Style. The colonnade at entrance with sloping pediment back of same are typical of the style; also the sloping tile roof and windows between flat pilasters in the flanking wings.



PALO ALTO UNION HIGH SCHOOL, PALO ALTO, CAL.

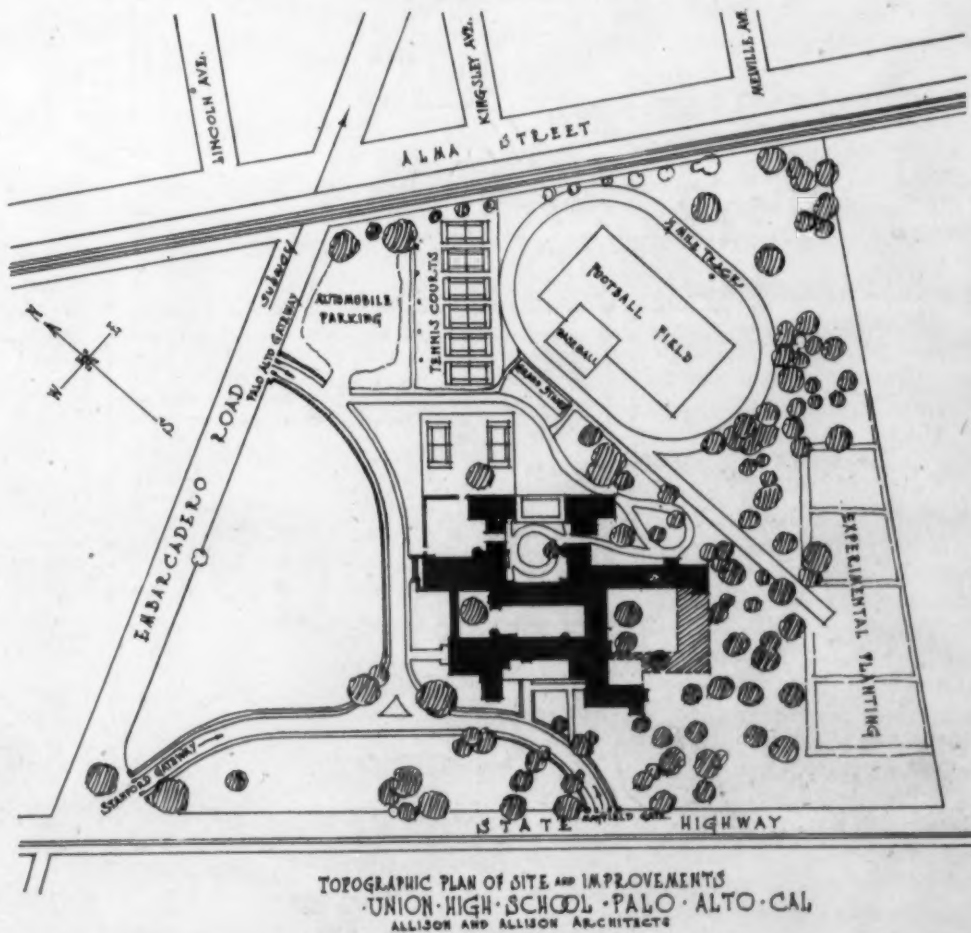
THE PALO ALTO UNION HIGH SCHOOL

To the schoolman who is accustomed to look upon a new high school building as a compact urban structure, limited to a single city block, multi-storied and ingenious in its saving of ground space, the Palo Alto High School is a distinct and pleasant surprise. There is about this group of buildings the charm of the old-time California mission and the spirit of the small college. Viewed from any point of approach, the building appears to be an irregular mass, picturesque in effect, warm and bright in color, and attractive as well as inviting. If the plan, however, is studied it will be seen that the arrangement is distinctly regular and well balanced and embodies a number of most interesting principles of high school planning and construction. The building is planned with the dominant idea of grouping departments and of permitting future extension. Elasticity of departments and of the whole is a strong characteristic. The building occupies an irregular, four-cornered plot strategically located for access from all parts of the community. The site is level and is made beautiful by large oak trees which are scattered over it. The land is the property of Stanford University and has been rented to the school district at the nominal sum of \$1 per acre, per annum.

The Palo Alto Union High School District has existed since 1916 and includes the towns of Mayfield, Stanford and Palo Alto. It serves a high-grade residential and college community, of which the dominant interest is the Leland Stanford Junior University. The problem of erecting the present building has been under consideration since August, 1917, and the bond election for the structure was carried in January, 1917. Ground for the new buildings was broken in December, 1917, and the construction has been going on up to December 24, 1918, when the building was declared complete and was first occupied for school purposes.

It will be noted from a study of the main floor plan that the building has been developed strictly on the basis of the departmental groups of the high school. The academic classes are lodged in the administration building, which includes the library, the study hall, the office of the school and fourteen classrooms. The science department is southwest of this building and, in-

cludes three laboratories and a lecture room, and a small biological garden. The commercial department is immediately east of the science group and consists of a typewriting room, an office practice room and a bookkeeping room. The domestic arts department, with its classrooms, sewing and cooking rooms, etc., is in the heart of the group and connects the commercial





LIBRARY, PALO ALTO UNION HIGH SCHOOL, PALO ALTO, CAL.

department with the auditorium. The manual arts department forms the southeast wing of the group where its activities will not disturb the remainder of the school. The art department and the cafeteria form the eastern wing of what is to be an interesting court, upon which the girls' gymnasium, the auditorium and the domestic arts departments will back. A feature of this court will be a swimming pool which is still to be built. The northernmost wing of the group contains the auditorium which is still unfinished on the inside. Future extensions of the group will make a large court to the southeast and will afford space for an interesting garden. Probably the most novel feature of the

entire group is the study court which is intended for actual use as its name indicates.

The present building is intended to serve from five hundred to eight hundred pupils and the extensions will be such that all departments can be expanded as needed without marring the architectural effect or destroying the administrative unity of the group. The present auditorium is large enough to seat 1,500—the ultimate capacity of the school.

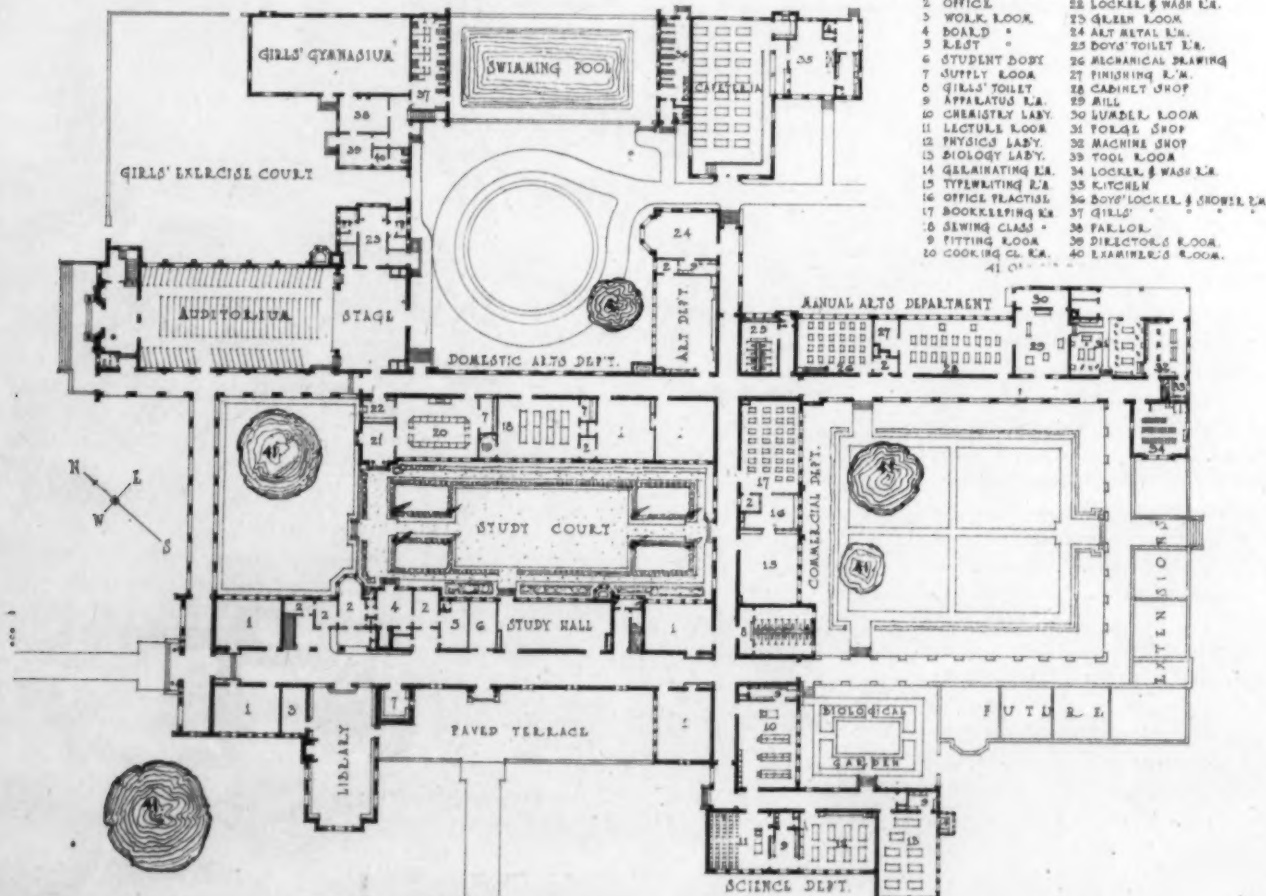
The central idea of the building is embodied in the library. Concerning this, Mr. Walter H. Nichols, superintendent of the Palo Alto schools, remarks:

"Books remain the master tool of educational

processes, all pseudo-vocational, moving-picture theories of education to the contrary notwithstanding. Literature must still be sensed from the printed page. History teaching without books is a profanity. Languages are the very stuff books are made of. No genuine knowledge even of mathematics comes to a pupil unless he at least senses the fact that there is a literature of the abstract and applied sciences of measurements. Books are themselves visual education. Their very backs challenge the alert student, while the moving picture and the traveling exhibit themselves are almost inert apart from explanatory books. Exact science is poverty-stricken without its master interpreters and seers whose names stand out from the library shelves. In the library are gathered the ideals of all time and of all men, and even a dullard must be quickened into some sort of vision of life by the very fact of sitting quietly surrounded by books. In the full faith that the library may be made the wellspring of ideality in the lives of high school pupils, the trustees have set their seal on this spacious, central room."

The buildings have been constructed and equipped to meet not only the educational requirements but also to serve the physical comfort of the pupils, and to withstand local climatic conditions. The one-story sections are built of frame and the two-story sections are constructed of brick, re-enforced with steel rods to withstand possible earthquake. All of the buildings are faced with cement plaster and have red tile roofs. The exterior is an interesting modernized adaptation of the Mission style, with a low campanile tower as the central feature.

The interesting architectural treatment of the exterior has been extended to the interior. The most emphasis is in the library, which is quite unique and restful with its fireplace and open beam roof. The bookshelves, cabinets, lockers and laboratory tables were designed by the arch-



LEGEND

- | | |
|-------------------|-----------------------------|
| 1 CLASS ROOM | 21 DINING ROOM |
| 2 OFFICE | 22 LOCKER & WASH R. |
| 3 WORK ROOM | 23 GREEN ROOM |
| 4 BOARD | 24 ART RETAIL R. |
| 5 REST | 25 BOYS TOILET R. |
| 6 STUDENT BODY | 26 MECHANICAL DRAWING |
| 7 SUPPLY ROOM | 27 FINISHING R. |
| 8 GIRLS' TOILET | 28 CABINET SHOP |
| 9 APPARATUS R. | 29 MILL |
| 10 CHEMISTRY LAB. | 30 LUMBER ROOM |
| 11 LECTURE ROOM | 31 FORGE SHOP |
| 12 PHYSICS LAB. | 32 MACHINE SHOP |
| 13 BIOLOGY LAB. | 33 TOOL ROOM |
| 14 GALVANIZING R. | 34 LOCKER & WASH R. |
| 15 TYPING R. | 35 KITCHEN |
| 16 OFFICE REACTOR | 36 BOYS' LOCKER & SHOWER R. |
| 17 BOOKKEEPING R. | 37 GIRLS' |
| 18 SEWING CLASS | 38 PARLOR |
| 19 FITTING ROOM | 39 DIRECTOR'S ROOM |
| 20 COOKING CL. R. | 40 EXAMINER'S ROOM |
| | 41 CH. |

MAIN FLOOR PLAN
UNION HIGH SCHOOL PALO ALTO, CALIFORNIA
ALLISON AND ALLISON ARCHITECTS, LOS ANGELES



PALO ALTO UNION HIGH SCHOOL, PALO ALTO, CAL.

itects and were built in the building as a part of the original contract. They harmonize fully with the general character of the building and with the interior wood trim.

The building was erected under the so-called segregated contract system without a general contractor. Fifteen different contracts were let and the work was carried on under the supervision of the architects who placed a superintendent of construction in direct charge. The results were in every way satisfactory and it is believed that at least ten per cent were saved on the cost.

Not the least interesting feature of the building was the plan by which the architects for the building were chosen. We can, perhaps, best describe this plan by quoting from an article by Mr. S. D. Townley, a member of the building

committee, who writes in the California Architect and Engineer:

"When the Palo Alto Union High School board decided to build a new school, about fifteen architects offered their services. The first step taken was to eliminate the names of all those who had not made a special study of school architecture. We believe we were justified in this action by the fact that school architecture has now become a very specialized branch of the general profession of architecture, and involves many special problems which are not met in the design of a business building or a residence. We went further and eliminated all those who had not actually designed and constructed at least one high school so situated that it would be possible for at least some members of the board to inspect the finished structure. This

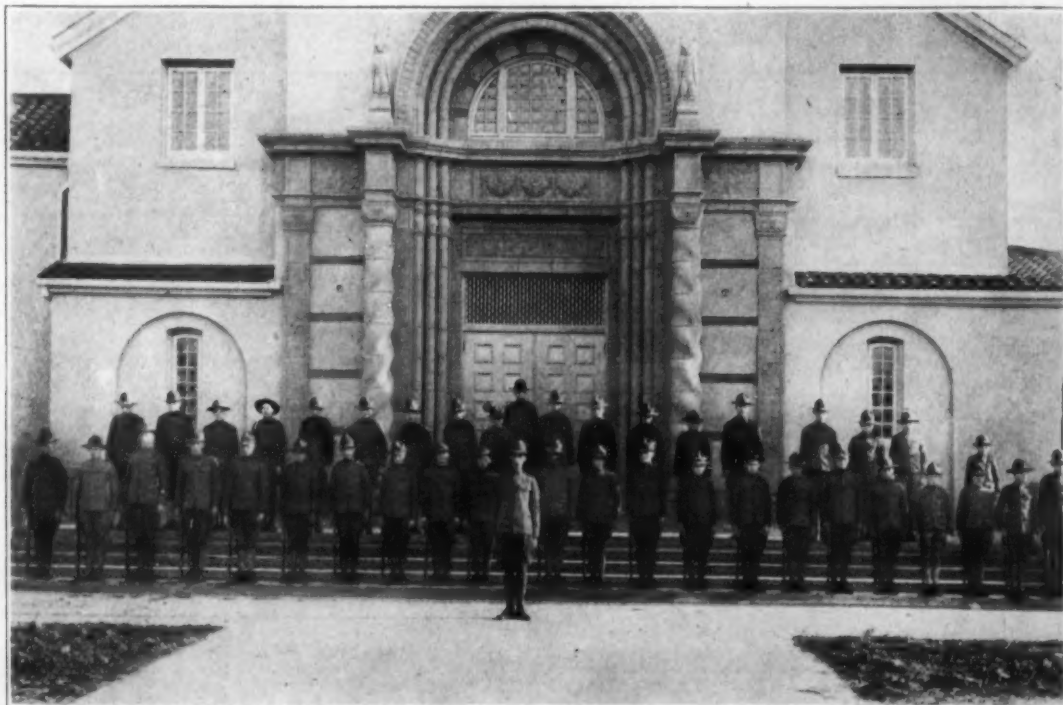
process narrowed our choice to about half a dozen individuals or firms. After a study of the credentials and work of this half dozen a further elimination was made by ballot in which each member of the board made three choices and the three firms receiving the highest number of votes were declared to be the only ones which should be given further consideration.

"The next step was to investigate more thoroly the work of each of these three architects. Schools built by them were visited and thoroly examined by members of the board, and finally each architect was asked to submit to the board a complete set of plans and specifications of a high school which had been designed and erected.

"To the layman all plans may look alike but in reality there may be great differences in them. Some plans are so drawn that the contractor may often be in doubt as to just what is meant and may have to spend a great amount of time finding the particular information he is looking for. It is possible, however, to draw plans in such a way that there can be no question as to what is meant, and to so index them that all details and information may be readily found. Specifications also may be too brief and, therefore, inaccurate, indefinite and insufficient. On the other hand, specifications may be too long, profuse, wordy and, therefore, also indefinite and unsatisfactory.

"Some of the members of our board had had experience in building and possessed some knowledge of problems of design, construction and engineering, and to them all plans were not alike. We deemed it wise, however, to go outside the board and seek expert advice. A committee of three, composed of two contractors and an engineer, were asked to study the three sets of plans and specifications in detail and to report the result of their investigations to the board.

"Finally, after all data had been gathered and studied, a 'score sheet' was constructed by each member of the board for each of the three architects and a final decision was reached. As items



DETAIL OF AUDITORIUM ENTRANCE, PALO ALTO HIGH SCHOOL. Student Cadets in Foreground.



BLACKFOOT TECHNICAL SCHOOL, BLACKFOOT, IDA. H. Newton Thornton, Architect, Idaho Falls, Ida.

on this score sheet the following may be mentioned: Training, practical experience, artistic ability, study of school problems, employment of experts by the architect (electrical engineers, heating and ventilating engineers, etc.), co-operation with board, cooperation with contractors, availability, personality, integrity, reputation, utility of design, economy of construction, perfection of plans and specifications.

"I believe the above is a scientific method of solving the problem of selecting an architect for school work. It takes time and means study and work for the members of the board and many midnight sessions, but if it results in giving the community a substantial, artistic and well-arranged school, will not the members of the board feel fully repaid for all their work and worry?"

THE NEW BLACKFOOT TECHNICAL SCHOOL.

Mr. H. N. Thornton, Architect, Idaho Falls, Ida.

In spite of great disadvantages in carrying out building operations during the past year the spirit of the citizens and of the school board at Blackfoot, Ida., has been interestingly expressed in the erection of a new technical school building adjoining the city high school. The building is the result of the natural increase in school population, and of the broadening of the courses of study offered in the high school.

The building has been planned to accommodate the shop and workrooms of the high school and to afford space for the development of vocational and prevocational courses. Incidentally, the architect has sought for the greatest possible safety against fire and panic, and has kept in mind the possible development and growth of the vocational department.

The building is a one-story structure and the various departments are conveniently isolated units, with separate entrances for each department. The west end is taken up by a large manual training shop, with small adjoining rooms for sanding, finishing and lumber storage. By a unique arrangement, the instructor's office

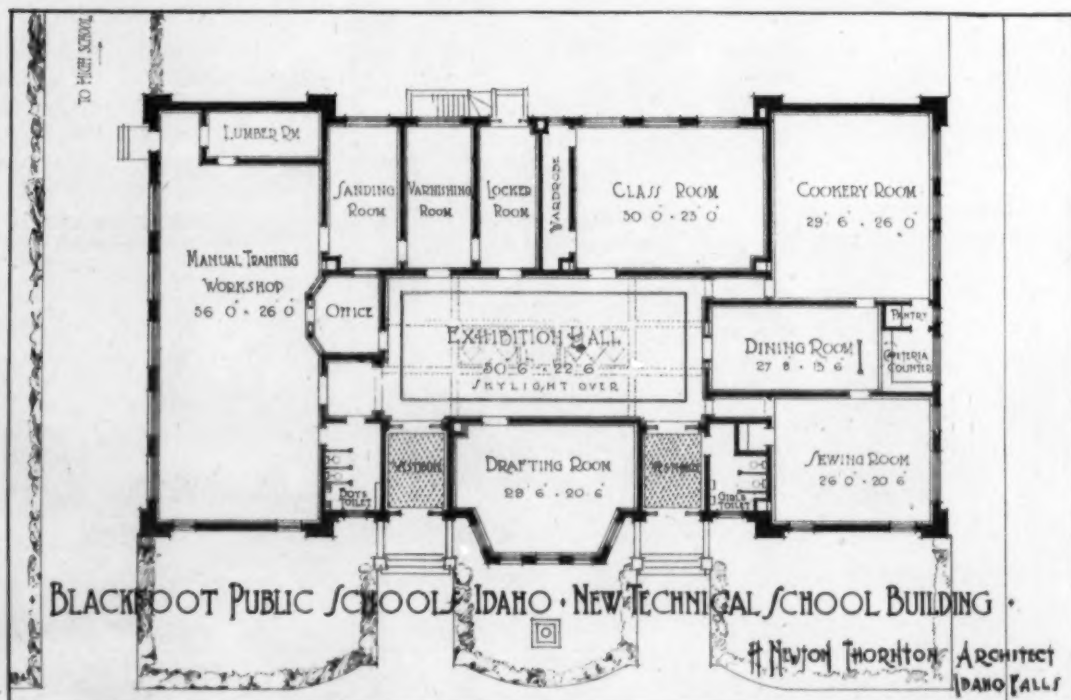
gives a complete view of the entire shop and is accessible to the smaller rooms. A well-lighted drawing room occupies the central portion of the front. It is equipped with built-in lockers, cupboards and bookcases. The domestic arts department occupies the east end of the building, with a sewing room, a cooking laboratory and a dining room. The arrangement is such that the dining room can be used as a cafeteria by the students. At the rear of the building there is a standard classroom for academic instruction in related subjects.

A rather interesting feature of the building is the large central hall, which is skylighted and which has been arranged especially as an exhibition hall for the products of the several departments and for general school displays. It is expected that it will also serve for social activities of the students.

The entire building is very plain in design.

The exterior is faced with buff brick and depends for its architectural effect on careful proportions rather than ornament. The large bay window of the drafting room forms an interesting central feature and serves to relieve the building from the severe institutional effect so common to school buildings. The interior is finished in plaster, with hardwood trim. Heat and ventilation are afforded by means of a modern vacuum steam plant. The separate toilet rooms are equipped with the best school-type plumbing fixtures.

The building was designed by Mr. H. Newton Thornton, of Idaho Falls, and many valuable suggestions for the structure were received from Mr. Vincent, the superintendent of schools. The public-spirited citizens of Blackfoot consider the building a mark of their interest in education and a true stimulus for education and democracy.



Administrative Offices in School Buildings

William Ferdinand Ewing, Director of Business Affairs, Technical High School, Oakland, California

In responding to the growing demands of modern social life, our schools have become highly organized institutions. In the planning and construction of large up-to-date school buildings we ought to make a scientific study of the size and orientation of grounds, of the proper arrangement of classrooms, offices and other parts of the plant. We should be able to assist the school architect in securing good lighting, satisfactory ventilating and heating and proper sanitary arrangements. We ought to know the kind and quality of equipment to be installed.

The proper development of the child is the most important thing in education. This thought should be the guiding principle for boards of education, superintendents, principals, teachers and others interested in promoting and extending the ideals of American education. A generation ago we limited our school activities almost exclusively to academic studies. Now the school has become the center of the child's world; not merely an intellectual one, but a real, physical and social world.

One of the most important features in the planning of school buildings seems almost wholly neglected. That is the administrative quarters. The reason for this is that school administrators have failed to study the problem, leaving it to the architect to assign such areas as would best fit into the general plan. The result has been poorly arranged and inadequate quarters.

Many years' experience in private and public schools convinces the writer that the enrollment of the school and size of plant are both increasing. In rural communities, consolidation of numerous small districts into larger, more modern organizations is growing. In cities we are coming to look upon schools of five hundred to one thousand children as quite ordinary. In the cosmopolitan centers there are individual schools having enrollments varying from one thousand to three thousand pupils. As our schools increase in size, the more complex become the administrative problems. The larger school buildings indicate a tendency toward the centralization of the administrative offices.

For convenience it has seemed best to divide this discussion into four parts:

- I. Administrative offices in a small elementary school.
- II. Administrative offices in a large elementary school.

III. Administrative offices in a medium sized or junior high school.

IV. Administrative offices in a large high school.

Administrative Offices in a Small Elementary School.

Assuming that the small elementary school has an enrollment of from one hundred and twenty to three hundred children, and estimating an average of thirty pupils per teacher, we shall have from four teachers to ten teachers in the school. The need for careful planning will obviously increase with the size of the school. A study of the literature on school architecture shows that much has been written on grounds and little on the planning of school buildings.

The following plan is suggested for small elementary schools (See figure 2):

1. Principal's office.
2. Teachers' room.
3. Janitor's office.
4. Office for the playground supervisor.

1. *The Principal's Office.* In most school buildings the principal's office is located on the first floor near the main entrance. Unfortunately for administration, it is most frequently located facing the street and not the playground. It should be well lighted and large enough to carry on the work of administration without crowding. Since necessity often requires the principal to work in her office after school hours and on days when school is not in session, *there should be some means of heating the office independently of the general plant.* The floor of the office and all other administrative offices should be covered with battleship linoleum. A good Wilton rug will add to the comfort and attractiveness of the room. A fine quality of scrim curtains may be hung at the windows.

The interior finish should be of good quality hard wood; quarter-sawn, antique oak is excellent. The furniture should be of the same kind and finish as the interior. Since the needs of the school are constantly changing, portable filing cabinets and sectional bookcases are desirable. These are well made and being constructed in units can be increased or decreased according to demand. A teachers' exchange cabinet, containing compartments for all the teachers, the janitor and supervisor, should be attached to the wall near the entrance to the office. At the bottom of the cabinet there should be an extra long division for large books, maps, etc. (For dimensions of the cabinet see figure 1.)

If there is sufficient wall space on either side of the exchange cabinet, one or more bulletin boards should be installed. A bulletin board should be at least two feet by four feet in size. It should be faced with a layer of cork. A beveled edge, plate glass top for the desk will prove a great convenience, for under it school and health regulations, telephone numbers, programs and other items of information most frequently used can be neatly and carefully kept. The wall should be hung with a few good pictures.

A door opening from the principal's office into a classroom is an advantage, for it provides a means to keep some one in touch with the telephone and office when the principal is engaged in supervision elsewhere. Adjacent to the office there should be a conference and supply room. It should be fitted with ample cabinets for keeping books and supplies that are needed frequently. It is a good plan to have cabinets closed with glass doors that can be locked. The conference room should have a door opening into the corridor. This would afford easy access for

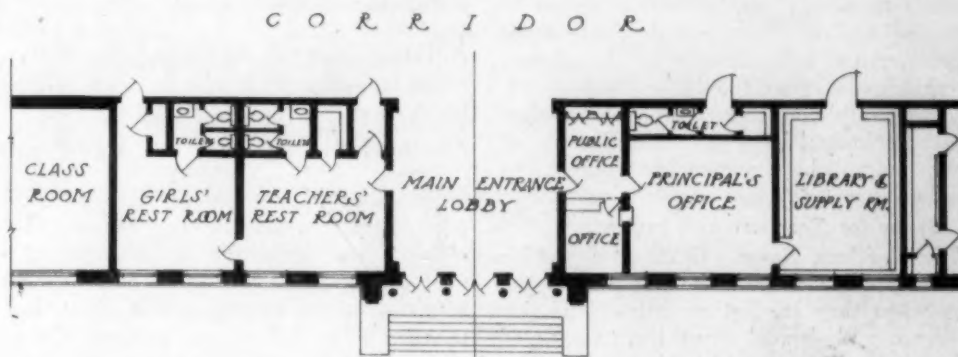
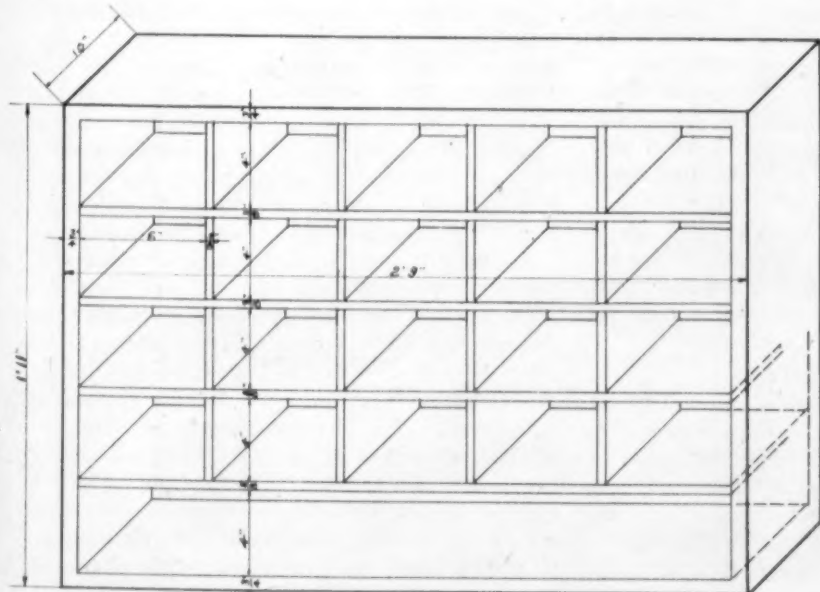
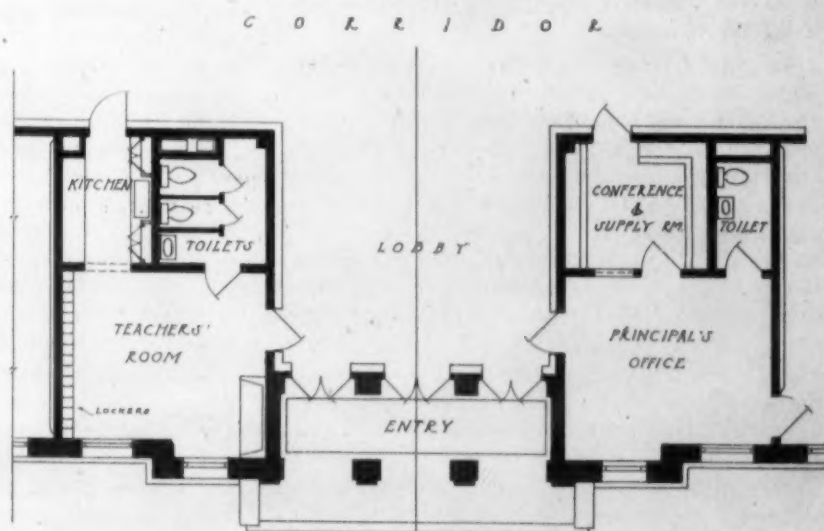


FIG. 3. ADMINISTRATIVE GROUP FOR LARGE ELEMENTARY SCHOOLS.



TEACHERS' POST OFFICE & EXCHANGE BOX

Fig. 1



PLAN OF PRINCIPAL'S AND TEACHERS' SUITE FOR A SMALL ELEMENTARY SCHOOL

Fig. 2

the janitor to deliver supplies and it would serve also as an exit for callers.

The school telephone exchange, master clock and public telephone are invariably placed in the principal's office. Provision should be made for a lavatory and toilet directly off the office.

The principal's room should be made as attractive as possible, not merely for the satisfaction of the principal herself, but for the wholesome effect it will have on teachers, pupils and patrons.

Space for Teachers and Janitor.

2. *The Teachers' Room.* Every school building should provide convenient quarters for the teachers when they are not on duty. The size of the room will depend upon the number of teachers employed in the school building. The interior finish, curtains, kind and quality of furniture should correspond to that of the principal's office. The room might serve as a rest room and dining room combined. It ought to be furnished with a couch, pillows and blankets and a "first aid" outfit.

Adjacent to the teachers' room there should be a set of toilets and a lavatory. Opening into the room there should be a small kitchen equipped with a gas stove, sink, china closet, and such cooking utensils as are necessary for preparing simple meals. There should be an exit from the kitchen direct to the corridor. In some schools full-sized steel lockers are placed in or near the teachers' room for use of the teachers.

3. *The Janitor's Quarters.* A casual examination of the plans of scores of the best, up-to-date school buildings discloses the fact that almost always the janitors' quarters are located in the basement of the building. Frequently they are put in a dark, poorly ventilated place near the furnace. If the janitor has an office, it is often a portion of the furnace room. Such conditions should no longer obtain. *The janitor ought to have a comfortable office, well lighted, properly ventilated and heated.* It should be equipped with a washstand having both hot and cold water connections. In addition there should be a full-sized steel locker. If possible, the office should face the school playground.

In the primary school the janitor is usually the only male employee. His influence among the boys often counts for more than that of the teacher. If he is kind and sympathetic, he may also claim the friendship of the girls. The wise and loyal janitor can easily prevent many cases of petty discipline from reaching the principal.

Adjacent to or near the janitor's office there should be a storage and work room. Tools and school supplies needed only occasionally may be kept here. A good work bench should be provided for the room.

4. *An Office for the Playground Supervisor.* Many cities have established municipal playgrounds in connection with the schools. These playgrounds are open after school hours until five P. M. or later, according to the season of the year. They are in charge of a playground supervisor, who may be a teacher in the school or a regular municipal playground employee. If a school is planned for after-school activities, it is desirable to have an office for the supervisor.

The office should be located in the basement, facing the playground. The interior and furniture should be similar to that of the janitor's office. Since the playground supervisor needs to have easy communication with school officials and homes, the office should be connected with an outside telephone.

It should be furnished with a desk and chairs and a cabinet for keeping supplies such as balls, bats, nets and mits. In short, the playground supervisor's office ought to be so well

furnished that it would be unnecessary to use any part of the regular school equipment.

A portion of the office should be set apart as a dressing room. It should be equipped with a washstand fitted for both hot and cold water, full-sized steel lockers for keeping clothing and other valuables, and with a couch, pillows and blankets and a "first aid" outfit.

Administrative Offices in a Large Elementary School.

Practice seems to favor the centralizing of administrative offices in large schools. In many cities, school buildings are constructed on the unit plan, thus providing an easy and satisfactory means for enlarging the plant, but it is usually quite difficult to increase the number and size of the administrative offices, hence it is desirable to plan them in the beginning for the maximum capacity of the school.

Assuming that the large elementary school will have an enrollment of from three hundred to fifteen hundred pupils and estimating an average of thirty pupils to a teacher, we shall have from ten to fifty teachers in the school. The need for ample quarters, therefore, is obvious. The real problem is to determine definitely what rooms should be included in the administrative suite. For our discussion let us include most of those quarters which are not directly under the supervision of the class teachers. We shall then have the following, *General Plan* (See Figure 3):

1. A principal's office.
2. A teachers' rest room.
3. A girls' rest room.
4. A library.
5. A janitor's office.
6. An office for the playground supervisor.
7. A teachers' lunch room.

1. *The Principal's Office.* In the large elementary school the principal's office should be spacious enough to accommodate several persons at the same time. Frequently the principal wishes to call meetings of various groups of pupils or teachers or both; these can be held in the principal's office better than elsewhere if there is ample room.

The fixtures, floor covering, filing cabinets and bookcases should be of the same kind and quality as those in the small elementary school. In many of the best planned, large school buildings we find an outer waiting room. The entrance to it is usually from the vestibule or the main corridor. It is a great convenience to have an outer waiting room where the teachers may register their time on arriving at school in the morning and leaving again in the afternoon. Figure 3 shows a division between the public waiting room or lobby and the secretary's office. The two divisions of this office may well be separated by means of a large, wide counter, at one end of which is a gate providing an entrance to the secretary's desk. The inside of the counter should be fitted with shelves and pigeon holes for keeping blank forms and office supplies. There should be an easy entrance from the secretary's office to the principal's.

This plan shows both lavatory and toilet directly in the rear of the principal's private office. An exit from the latter office is desirable. It is often embarrassing to dismiss parents or teachers into the public waiting room.

Rest Rooms Desirable.

2. *The Teachers' Rest Room.* In order that the principal may have an easy means of supervising the teachers' room, it seems advisable to have it located near the main office. General practice indicates this, altho in some well arranged buildings the teachers' rest room is located on the second floor rather than opposite the principal's office on the first floor. The location of the room will be determined by the convenience it offers the teachers. Figure three

shows a teachers' rest room opening from the main entrance and having an exit to the main corridor as well as to the girls' rest room. The teachers' rest room should be fitted with suitable chairs, couches, blankets, pillows and other comforts. Adjacent to the room or opening into it there should be a locker room, a set of toilets and a lavatory.

3. *The Girls' Rest Room.* The girls' rest room should be provided with toilets, a lavatory and a supply room. The rest room should be furnished with a table and chairs, couches, pillows and blankets, and a "first aid" outfit. For convenience there ought to be an exit to the main corridor. One of the main reasons for placing the girls' rest room adjacent to the teachers' is that the teachers should have pretty close supervision over the girls wherever they happen to be.

4. *The Library.* The up-to-date, large elementary school should have a room set apart for a library. It should be fitted with bookcases or cabinets covered with glass doors. The size of the room and the capacity of the cases will depend largely upon the size and character of the school. If it has free textbooks there should be ample storage for all incoming books and other supplies frequently used. Figure three shows entrances to the library both from the principal's office and from the main corridor.

5. *The Janitor's office.* The usual practice provides an office for the janitor in the basement of the building. If possible it should be so located that there will be easy access to the furnace room, to the playground and to the boys' toilets. The office should be placed so it will have an abundance of light and good ventilation. It should be equipped with proper furniture and a locker for clothing and other valuables. It should have a washstand fitted with hot and cold water. If possible, adjacent to the janitor's office there should be a work room fitted with a good work bench and adequate tools for doing repair work. In many schools the janitor is the only person who can attend to small repairs when they are most needed. If the school has a garden, it would be well to provide the janitor with garden tools.

A Room for Playground Supervisor.

6. *An Office for the Playground Supervisor.* If the school has a playground, a good office should be provided for its supervisor. Almost none of the plans of elementary schools show any provision for this activity, altho many cities have established playgrounds in connection with the larger elementary schools. The playground office should be well lighted and heated. It should have linoleum floor covering, with perhaps one or two small mats. The office should have a table and chairs and a cabinet for keeping playground supplies. Generally the playground work is in charge of one of the lady teachers. It is quite desirable that she should have a place to dress and to keep her personal effects when she is attired in playground costume. A small dressing room containing a couch, blankets, "first aid" outfit, a washstand and locker would prove a great convenience.

7. *The Teachers' Lunchroom.* Since the teachers' lunchroom forms a daily meeting place for teachers and principal, it seems best to include it in the administrative offices. Some modern school buildings have provided lunchroom and kitchen facilities solely for the use of the teachers, tho in many schools the domestic science equipment is used by the teachers for preparing light lunches. The best plan seems to require separate accommodations for teachers and pupils. The location of the lunchroom should naturally be determined by the character of the building. If there is a high, well ventilated basement and room can be found to locate the teachers' lunchroom and kitchen on the

sunny side of the building, there is no objection to having it placed in the basement. The lunchroom should be large enough to accommodate all the teachers and one or two occasional visitors. There should be plenty of chairs and a good table. The lunchroom should be as cosy and homelike as possible. Immediately adjoining the lunchroom there should be a kitchen fitted with a gas range, china closet, sink and such utensils as may be required for preparing simple lunches.

Administrative Offices in a Medium-Sized High School.

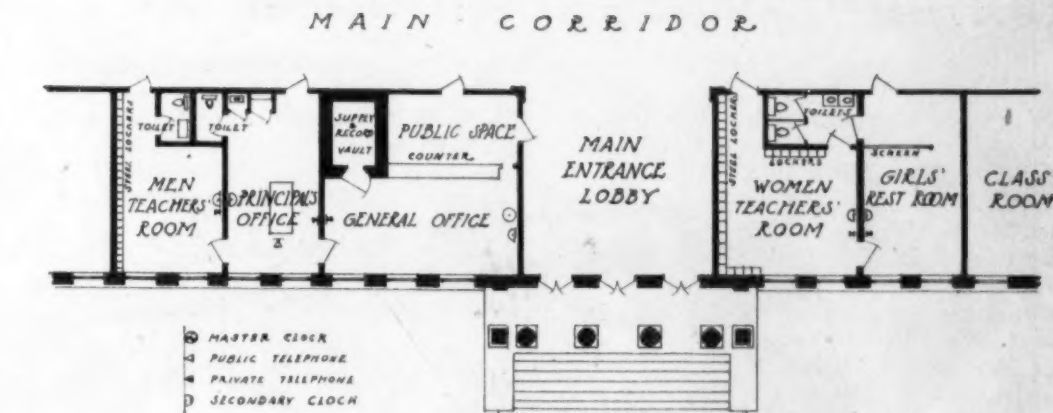
In the past, the planning of administrative quarters in the medium-sized academic high school received more attention than those of other school buildings. An explanation for this condition may be easily found. For many years the city high school was a medium sized organization. It was the pride of the city. High school principals and high school teachers learned the administrative needs of the school by years of experience. Furthermore, the high school faculty was composed of a comparatively small group of men and women. They were well acquainted with each other. They were known by their pupils. The principal could issue orders by "word of mouth" and he could personally supervise the work of each teacher and of every class.

All these conditions obtained in the older academic type of school. But with the expansion of our high school curriculum and the inclusion of many formerly so-called extra-curricular studies, we are forced to pay more attention to the planning of the school and the administrative offices.

Figure five embodies some of the best ideas for the medium-sized high school. The general plan involves:

1. A general office.
2. A principal's office.
3. A room for men teachers.
4. A room for women teachers.
5. A girls' rest room.

1. *The General Office.* In the medium-sized high school we frequently find that there is an outer office or waiting room adjacent to the principal's office. This seems to be a desirable plan, for many of the questions that come to the principal's office can be answered without interrupting the constructive work of the principal. Figure five shows a large general office near the main entrance. Entering the general office is a waiting room or public space. It is separated from the general office by a large, high counter at one end of which is a gate. The rear of the counter should be fitted with pigeon



PLAN OF PRINCIPAL'S & TEACHERS' SUITE FOR A MEDIUM-SIZED HIGH SCHOOL.

Fig 5

holes and shelves for keeping office appliances, blanks, stationery and other equipment. On top of the counter under a heavy glass plate there may be kept the school program and such other frequently used bulletins of information. The waiting room has a door to the main corridor and one to the main entrance. The general office should be equipped with the usual filing cabinets, bookcases, desks and chairs. The public telephone, the master clock and the school telephone exchange should be installed in the general office. Opening into the office is a door to the vault and record room. At one side of the office is a door to the principal's office.

Teachers' Rooms.

2. *The Principal's Office.* The principal's office is located between the general office and the men teachers' room. There is a passage to both the general office and the men teachers' room from the principal's office, also an entrance from the main corridor to the principal's office. There is a lavatory and toilet opening off the principal's office, also a small cloak room. The furniture and equipment of the principal's office will be of good quality, quarter-sawn antique oak. The floor should be covered with plain battleship linoleum. It will add to the

attractiveness greatly, if it is covered with a good Wilton rug.

3. *The Men Teachers' Room.* The men teachers' room should be furnished with a table and chairs and provided with enough steel lockers so that each teacher would have a full-sized locker. Opening off from the room should be a toilet and lavatory.

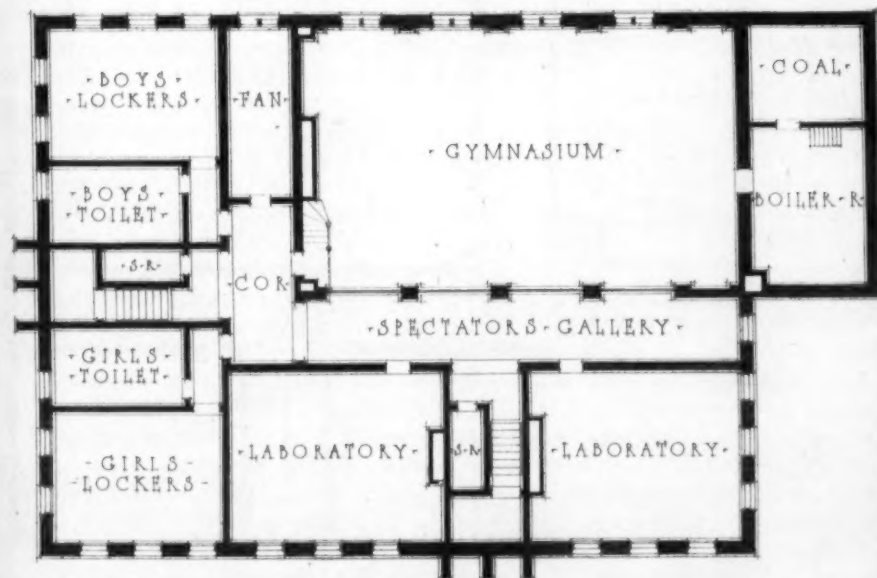
4. *The Women Teachers' Room.* Across the lobby from the general office should be a women teachers' room. The floor should be covered with a good quality of linoleum. It should be furnished with chairs, a table and a couch. On one side of the room there should be a number of steel lockers, at least one for each teacher. The furnishings for this room should be left to the judgment of the women teachers. It should be made as cozy and comfortable as possible. Opening off the room there should be a set of toilets and lavatories. At one side of the room there is a door into the girls' rest room.

5. *The Girls' Rest Room.* The girls' rest room should be furnished with chairs, couches, blankets, pillows and a "first aid" outfit. In order to give as much privacy as possible it is desirable to have a screen between the entrance to the room and the main part of it.

BELVIDERE HIGH SCHOOL

The problem of providing proper and adequate facilities for the town of small size with little or no normal increase in population becomes a difficult one and too frequently resolves itself into adding a few rooms to the old grade school on the plea of economy. Belvidere's high

school building was conceived with a firm resolve to accomplish something more in keeping with the spirit of the times and more fully to meet the requirements of the county seat and the adjoining rural sections from which many of the pupils come, thanks to the development



BASEMENT PLAN

HIGH SCHOOL, BELVIDERE, N. J.



HIGH SCHOOL, BELVIDERE, N. J.



HIGH SCHOOL, BELVIDERE, N. J. Rasmussen & Wayland, Architects, New York, N. Y.

of a comprehensive system of transportation.

Much opposition was encountered from the advocates of a single school plant and from those who were opposed to providing facilities for out-of-town pupils. All of this opposition has disappeared with the completion of the building.

Only by the strictest economy, the most careful utilization of space and simplicity of design was it possible to secure those features which were considered essential for the school to take its proper place in the life and ideals of the community.

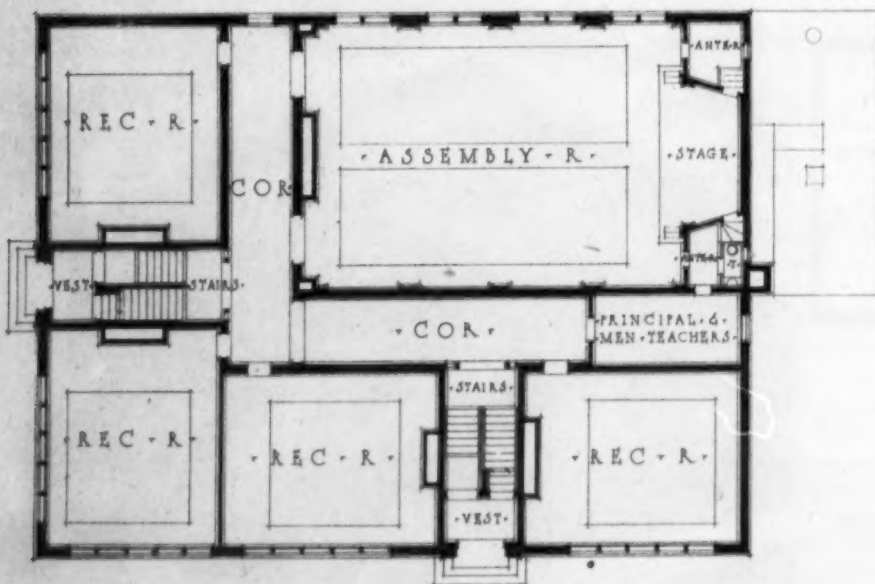
The site on the southeast corner of Third and Greenwich Streets, is in a delightful residential section of the old Delaware River town and is within three squares of the railway station and one square west of the town green. With its stately trees, it presents a fitting setting for the building and has possibilities of development along either street frontage which will undoubtedly be availed of when the growing sentiment for secondary education has developed more fully in the rural sections.

The building is set well up from the street. With its basement story practically out of

ground, its simple classical entrances, stone trimmings, and the soft warm color of brick-work it presents a pleasing setting and appearance.

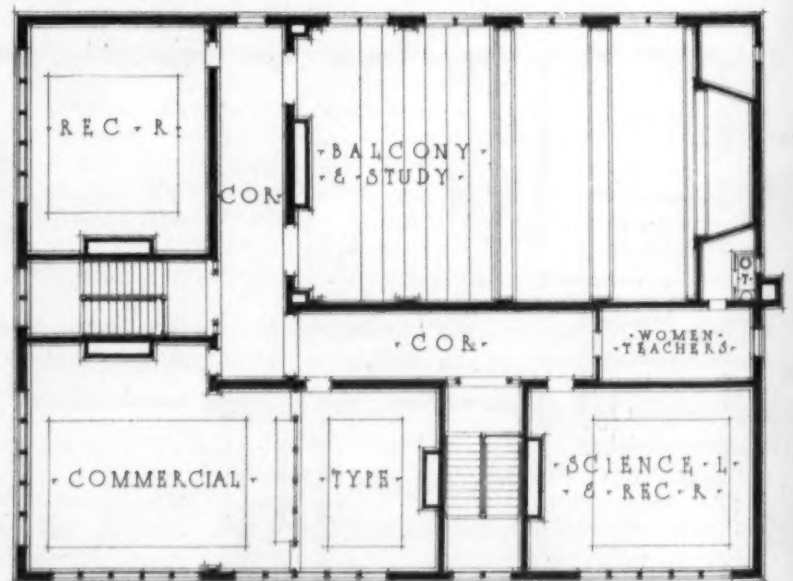
It is planned on the unit principle so that extension can be made along either frontage without in any way interfering or marring any of the present construction. The removal of the partitions forming teachers' and principal's rooms converts that space into corridor should extension be made along the Greenwich Street front.

(Concluded on Page 79)



- FIRST FLOOR PLAN -

HIGH SCHOOL, BELVIDERE, N. J.



- SECOND FLOOR PLAN -

HIGH SCHOOL, BELVIDERE, N. J.

Changing Standards of Schoolhouse Ventilation

Louis W. Rapeer, Ph. D., Federal Board for Vocational Education

That there is some close relationship between the air and health is fairly well proved. What the relationship is we do not know. Since oxygen is needed for life and growth, and since animals die in closed chambers of carbon dioxide, and for a number of other reasons, the hypothesis has long been held that the leading factor is the chemical composition of the air. Recent investigation, however, raises a new and rival hypothesis, namely, that the principal factor is the physical condition of the atmosphere. Under the old hypothesis, the principal factors were supposed to be relative amounts of oxygen, carbon dioxide, and volatile organic matters. The air as it functions in the lungs in respiration was the center of consideration. Under the new hypothesis, the principal factors seem to be relative movement of the air, humidity, and temperature. Attention is directed away from the respiratory functions and the lungs to ventilation functions and the heat-regulating mechanism of the skin. Respiration is distinguished from ventilation.

In most schools of the land, elementary and high, the old theory is still taught to explain both respiration and ventilation. And practically all ventilating systems of the country are based on the old hypothesis. In the best systems, for example, immense quantities of outside air are brought into schools, heated up usually to an uncomfortable temperature, by means of steam pipes in the fan room, is then driven into the classrooms at great velocity, and sent out thru ducts thru the roof or stack. The common standard is about thirty cubic feet of "fresh" air per pupil per minute, and the velocity is around four-hundred feet a minute. A school plant seems to be doing its best to heat up all of the outside atmosphere and send it thru the building. The cost in coal and labor is enormous. Is the value received worth the cost?

This is a very expensive system, since such enormous quantities of outdoor air are brought in, heated up considerably, sometimes from zero temperature, or below, to sixty-five, seventy degrees or more, and then forced out thru the outlet duct in the roof. The whole plan is to get as much "fresh" air in contact with the pupils at all times as possible, without creating drafts. Drafts are very much feared, and the air currents with the fan system are so directed as not to blow against the pupils. In schools without the fan system, and in the ordinary home without the hot-air furnace, the air is usually almost entirely static, unmoving, and the only ventilation, so-called, is the occasional introduction of outside air and the movement thru cracks about doors and windows.

Tubercular people living in cities and places where the air is supposed to be bad seek situations where there seems to be "plenty of good fresh air." Certain climatic regions are supposed to be much better than others in this respect. There are many factors involved here—sunlight, food, rest, change, hygiene in living, "the will to get well" and excellent physical condition, etc., all of which are probably contributing factors. We do not know which of these factors are most influential, and we have no way of isolating them and trying them, one at a time, with the omission of the others. The whole problem is bound up with the logical fallacy of multiplication of causes.

In recent years, scientific investigations of the relations of the atmosphere to our health have been made in several countries, especially in England and the United States. One of the most noteworthy studies in recent years is that

of Dr. Hill and others, in the London Hospital, as reported in a Bulletin of the Smithsonian Institute on the "Relation of the Atmosphere to our Health," and in an article in *The Popular Science Monthly* a few years ago by Hill on "Stuffy Rooms." Other recent investigations have been carried on by the New York State Ventilation Commission, The International Y. M. C. A. Gymnasium at Springfield, Mass., Dr. Bass of the University of Minnesota, in a Minneapolis school, by several individuals in private life, and by a number of public and private investigators of animal nutrition.

Dr. Hill built an air-tight room about seven or eight feet on a side and put five to seven students in it for varying periods of time. He then changed one after another of the factors which seemed to be most closely related to health and comfort. For example, he left the man in the chamber for a considerable length of time, until the air got so bad in its carbon-dioxide content that a match would not burn. The men felt discomfort in such an atmosphere when it was static and the temperature was high with a high percentage of humidity. But when any one of these three factors was changed in the way of greater movement of the air and the use of fans to lower humidity and decrease temperature to about 65 to 68 degrees, the men experienced relief and comfort. Turning on the fan and creating a perceptible air current in the chamber, even with the air high in carbon-dioxide content, immediately brought relief from the discomfort of bad ventilation.

The air was cooled by passing cold water thru a radiator and the humidity could be changed at will. The optimum temperature seemed to be that indicated above; the optimum humidity seemed to be around 50 per cent saturation, and the temperature around 67 to 68 degrees. A carbon-dioxide content far greater in proportion than is to be found in the worst ventilated room in any school, factory, or home of America caused no ill effects, seemingly. The determining factors seemed to be movement, temperature, and humidity, rather than oxygen and carbon dioxide.

The ordinary percentage of carbon dioxide in the air is about 0.04 per cent. In the worst ventilated room it gets as bad as 0.4 of one per cent. But to be injurious to health, the proportion of carbon dioxide must rise up to four per cent. These men, above mentioned, however, experienced with comfort, and no seeming ill effects, carbon dioxide content of eight per cent and above.

When the air conditions were allowed to become as bad as they could be stood by the men, in the two factors mentioned above, especially carbon dioxide in excess, the experiment was tried of having the men breathe the outside fresh air thru tubes in the sides of the air-tight room in which they were enclosed. This, however, failed to give them physical comfort. The evil effects of bad ventilation were still suffered. They were breathing fresh air into their lungs and yet were not being ventilated.

Individuals outside of the box, in the fresh air, also tried the experiment of breathing the bad air inside the box thru tubes in the sides, and, strange to say, they experienced no discomfort in breathing this "contaminated" air. Here, by the logical method of difference, a serious question was raised as to what constitutes ventilation. Is it the air which goes into the lungs and provides oxygen to the cells thru the blood, or is it something else? Are respiration and ventilation entirely separate matters?

The something else which seemed to be

isolated in this investigation, seemed to be the *heat-regulating mechanism of the skin*. In static air, especially when it has a high temperature and humidity percentage, a capsule-like envelop of moisture seems to gather on the surface of the skin and retard the throwing off of heat by the body. Heat prostration tends to come on, and the ill effects of the bad ventilation seem thus to come from the disturbance of the heat-regulating function of the skin. A current of air, to which a man's body is adapted, tends to break up this capsule, hasten evaporation of perspiration, and keeps the body at a normal temperature. Relatively dry air helps this process better than moist air, and a low temperature, of course, favors the process.

In brief, Hill's experiments, which have later been largely corroborated and verified, shift the attention from the lungs to the skin, and from the chemical composition of the air to its physical condition. The factors in ventilation then seem to become the following:

1. Relative movement of the air—perceptible air currents.
2. Relative humidity—about half saturation.
3. Relative temperature—about 68° F.
4. The condition of the skin—cleanliness and free pores.
5. Relative amount and kind of clothing worn.
6. Relative amount and kind of exercise—physical exercise being desirable in causing a free and rapid circulation of the blood, and thus a better radiation of excess heat.

In hygiene, the emphasis shifts to regular periods of exercise, bathing, and cleanliness, to loose and light clothing, as little as possible, especially in the summer and in warm climates, and to securing perceptible but not strong drafts, suitable temperature, and humidity.

The standard illustrations of the old ventilation methods are of the mouse dying in the closed glass jar, the large number of persons losing their lives in a single night who were shut up in the Black Hole of Calcutta, and the ensuing death of a number of people who were shut up in the hold of a ship during a storm. The physiologists claimed that these people died from a lack of oxygen and a surplus of carbon dioxide—from air poisoning. The newer physiologists claim that these people died from heat prostration. They say also that it is practically impossible to build an ordinary room that will contain carbon dioxide in sufficient quantities to be injurious, because it passes readily thru most walls with considerable rapidity, and that it is practically impossible, under ordinary conditions, to lower the oxygen content sufficiently to affect comfort or health seriously. It is said that the New York Ventilation Commission spent \$7,000 in a vain attempt to build a room that would hold carbon dioxide in sufficient quantities to cause discomfort and poisoning. Certainly the ordinary building is free from dangers of having too much carbon dioxide or too little oxygen, if these latter theories are sound.

If the chemical composition of the air is of relatively little importance, why is it not possible to use the same air over and over again in a building? It can be put into motion; its temperature can be regulated; its humidity can be modified at will; and it can be washed free from odors, dust, and poisonous gases. The air can be put into motion with a fan system; in cold weather the percentages of moisture which has been decreased by heat can be raised by passing it thru a room filled with fine sprays of

(Concluded on Page 52)

ONE AND TWO-STORY SCHOOL BUILDINGS: A COMPARISON OF THEIR COST

Dwight H. Perkins, F. A. I. A.

In the article in the AMERICAN SCHOOL BOARD JOURNAL of April, 1918, on "One-Story Schools," it was stated at the outset that such plans were first made in response to the demand for economy but that development of the type had revealed advantages sufficient to justify its adoption even tho no saving in money resulted.

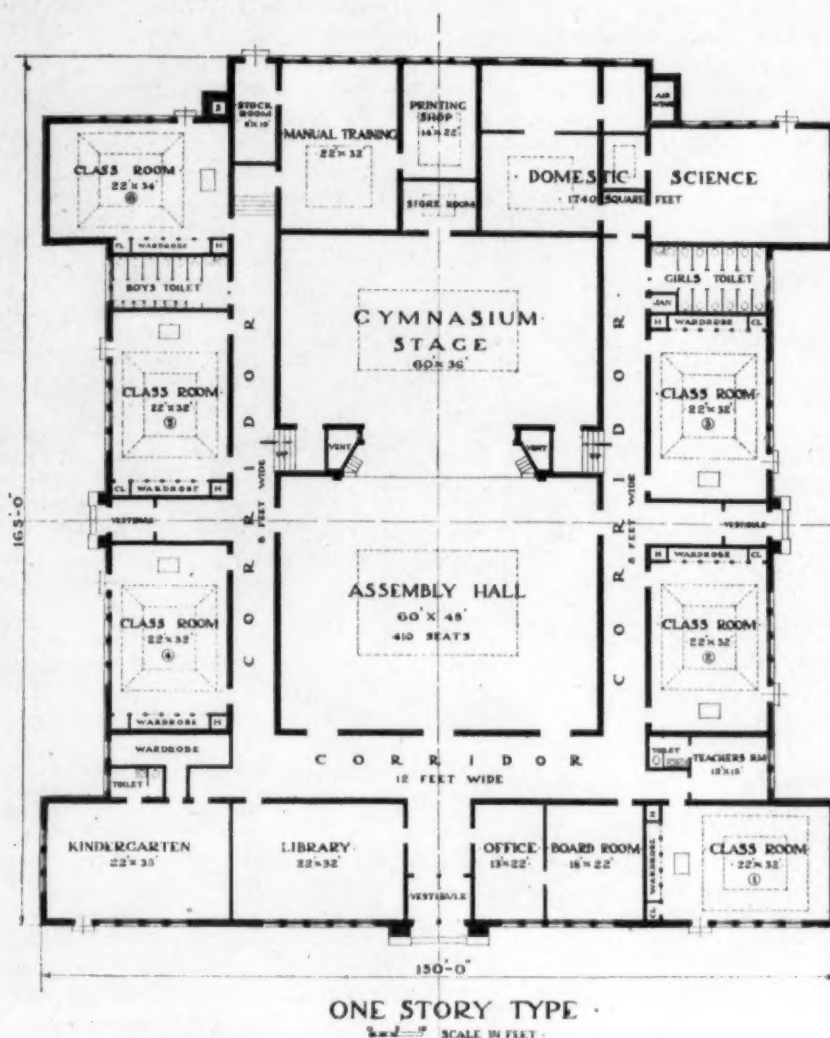
The question still arises: Can one-story school buildings be erected for as little money or less money than can the two-story type? This article is a contribution to the discussion in answer to that question. It disregards better lighting, greater safety, and freer control, and is confined to a comparison of costs in parallel columns.

Comparative general statistics in these columns are only given for the purpose of showing that the buildings are of practically the same capacity and that the expenditures indicated would secure the same results in either case, so far as available space for education is concerned.

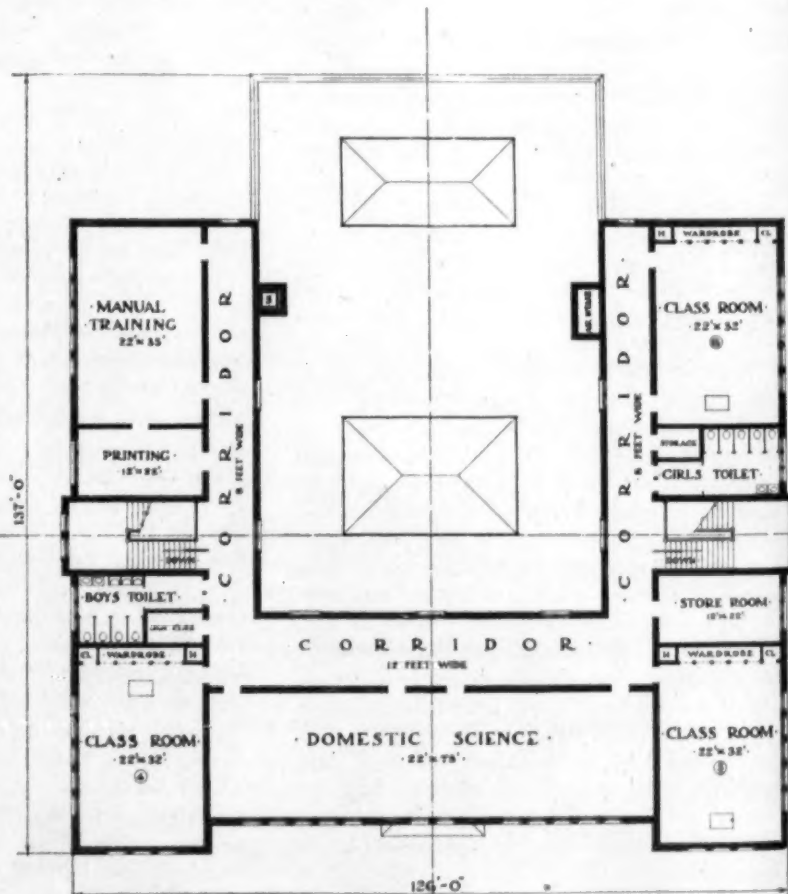
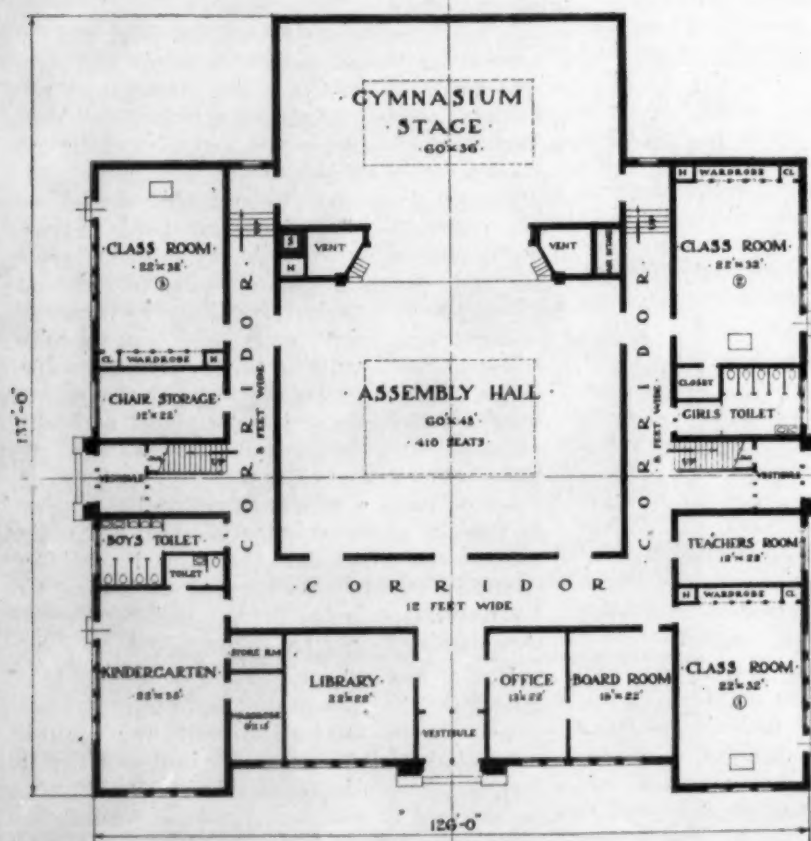
Plans "A" and "B," with the tables, were made for the Board of Education at Elmhurst, Illinois, to provide data for choice of type, one or two story. The lot was large enough for either plan, and the approaches from the streets were arranged with equal facility in each scheme so that consideration of the items listed was all that was necessary in order to arrive at a decision.

A slight difference in cost rate per cubic foot, is conceded in favor of the two-story type. The advantage is offset however, by the saving in corridor and stair space and the consequent decrease in the relative cubic contents per pupil in the one-story type.

Plans "C" and "D" were made in the same manner and for a similar purpose, for the Board of Education in Beloit, Wisconsin. Here the narrow lot, 250 feet wide east and west, entered



PLAN A. SCHOOLHOUSE FOR ELMHURST, ILL.



PLAN B. SCHOOLHOUSE SKETCHES FOR ELMHURST, ILL. Perkins, Fellows & Hamilton, Architects, Chicago, Ill.

COMPARATIVE STATISTICAL TABLE.
Plans "A" and "B" of the Elmhurst School.

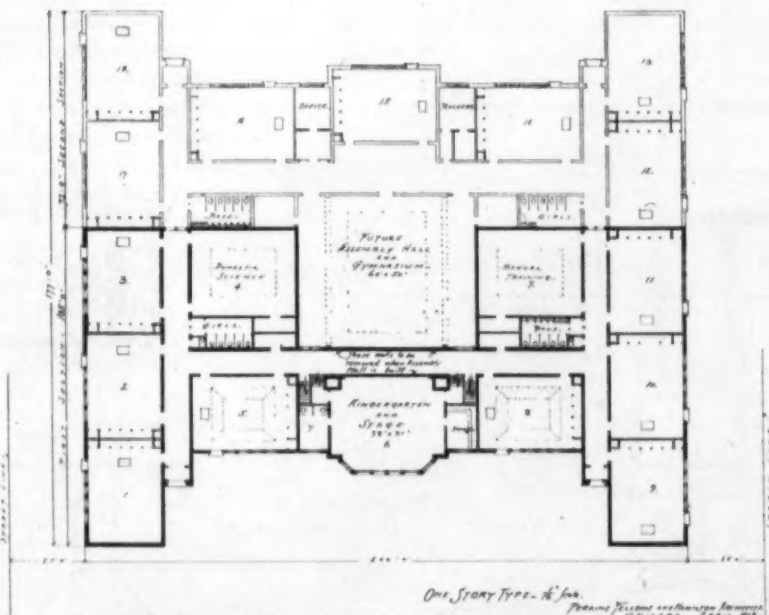
	"A" One Story Plan 150' x 165'	"B" Two Story Plan 126' x 137'
Dimensions	150' x 165'	126' x 137'
Area covered	21438 sq. ft.	15213 sq. ft.
Cubic contents	407256 @ 22c	462776 @ 21c
Cost	\$89596.00	\$97083.00
Cost per Classroom	7466.00	8090.00
Cost per Pupil	250.00	270.00
Toilet corridor and stair areas	4110 sq. ft.	6600 sq. ft.
Available area	15232 sq. ft.	15295 sq. ft.
Classroom units including Manual Training and Domestic Science	12	12
Classroom for pupils	9	9
Capacity—pupils	360	360
Assembly hall seats	410	410
Gymnasium—stage size	60 x 36	60 x 36

It will be observed that the unit costs in the Elmhurst case are higher than in the Beloit plan. Examination of the plan will reveal the large areas devoted to manual training and domestic science purposes—and the stage built to serve as a gymnasium in the Elmhurst Building, which accounts for the difference in unit costs.

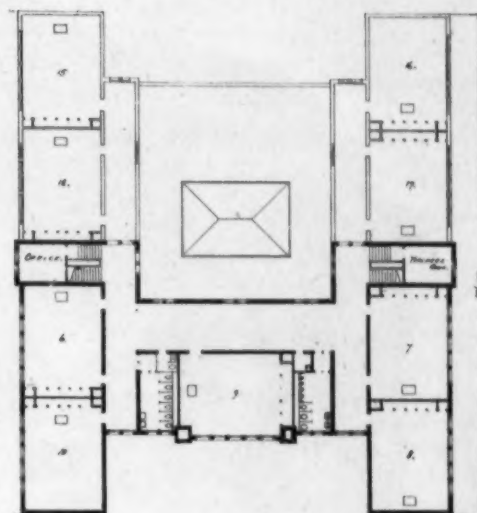
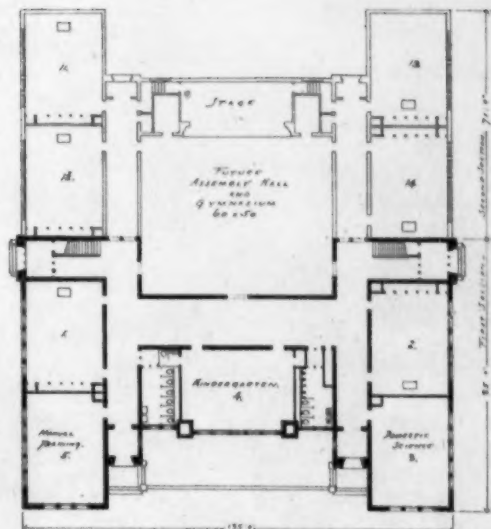
COMPARATIVE STATEMENT.

All schemes Semi-Fireproof—Upper floors wood construction—stairs and corridors all fireproof.

	C One Story Type	D Two Story Type with single story for Assembly Hall
Dimensions—E. & W.	200'	135'
Dimensions—N. & S.	177'	156'
Number of Classroom Units—		
First Section	11	10
Second Section	7	8
Capacity (No. of pupils)—		
First Section	395	350
Second Section	315	360
When Complete	710	710
Cost—		
First Section	\$ 58102.00	\$ 67357.00
Second Section	38121.00	48552.00
Complete	110983.00	115909.00
Cost—Per Classroom Unit—		
First Section	5282.00	6735.00
Second Section	7554.00	6069.00
Cost Per Pupil—		
First Section	147.00	192.00
Second Section	167.00	135.00
When Complete	156.00	163.00
Cubic Contents and Rate—		
First Section	264162 @ 22c	306170 @ 22c
Second Section	178432 @ 22c	262446 @ 18½c
Assembly Hall and Gymnasium Sizes	60x50—3000 sq. ft.	60x50—3000 sq. ft.
Assembly Hall Seats	425	425
Assembly Hall Stage Area	1368 sq. ft.	570 sq. ft.
Area Available for Educational Use	17774 sq. ft.	17403 sq. ft.
Corridor—Toilet and Stair Areas—		
First Section	2752	5880
Second Section	2712	1920 sq. ft.
Wardrobe Areas—		
First Section	624	504
Second Section	441	504
Outside Wall Areas—		
First Section	18750	21040
Second Section	10600	16760 sq. ft.
Playground Spaces	2x250'x211'	2x250'x222'
Spaces each side of building	25:0"	57:0"
	Too close to street	Proper distance from street



PLAN C. STUDY OF ONE-STORY SCHOOLHOUSE FOR BELOIT, WIS.



PLAN D. STUDY FOR ONE-STORY SCHOOLHOUSE FOR BELOIT, WIS.

into the problem and was an element, outside of the tables, which was considered.

In each of these cases, nothing was taken for granted; instead of specific and complete original study was required which should be related to the particular conditions of the problem before these boards. There was no dependence upon previous experience in other cities.

A study of the tables will reveal the fact that the educational areas secured were almost identical in the one- and two-story types in each city.

"C" and "D" are each planned to be built in two sections, the first being indicated by solid wall lines, the second portion by double wall lines. The desire in this case, to build at different periods, did not affect the one- or two-story question; each could embody that idea without waste or future inconvenience.

It will be observed that in each case, the relative difference in cost was not great enough to constitute in itself the determining factor in the decision, but that instead it became evident as a result of these studies that the boards in each case were free to choose the arrangement best adapted to the health, safety, and education of the children entrusted to their care.

Des Moines, Ia. The school bonds in the amount of \$500,000 for the erection of two high schools, have been sold at a premium of \$12,760. There were eight competing firms represented at the sale.

Hillsboro, Ill. A visiting nurse is to be employed to assist the school and health authorities

Aurora, E. S., Ill. A school nurse has been employed.



JEFFERSON SCHOOL, SHEBOYGAN, WIS. Rudolph R. Jahn, Archt., Sheboygan, Wis.

Recent Additions to Sheboygan Schools

A few years ago the city of Sheboygan, Wis., was confronted with the problem of relieving the crowded condition of the schools. A careful study revealed the fact that the existing buildings are well located near the centers of population in the respective wards, and are within reasonable walking distance of all the homes. In addition it was found that the buildings are in fair physical condition and entirely useful. After consideration of all the educational and economic factors involved, it was finally decided to add to the present buildings and Mr. Rudolph R. Jahn was employed to undertake the work of planning the additions and of supervising the construction and remodeling.

Thus far, three schools have been enlarged, with splendid results. The first school was the Jefferson, to which additions were completed in the fall of 1916, at a total cost of \$34,955, or 12.8 cents per cubic foot. The addition to the U. S. Grant School was completed in February, 1918, at a total cost of \$55,775, or 14.2 cents per cubic foot. The largest addition of the three, the Longfellow School, has just been completed, entailing an expenditure of approximately \$94,000, or 19.1 cents per cubic foot. The cost of this latest and largest addition is somewhat higher in comparison with the other additions, but this was partly due to the high cost of materials and labor prevailing last year.

By comparing the cubic foot costs of the different additions it will be seen that each one is somewhat higher in percentage than the previous one. In the case of the Jefferson School, the first cost was limited to a fixed sum, which was the important consideration in the work.

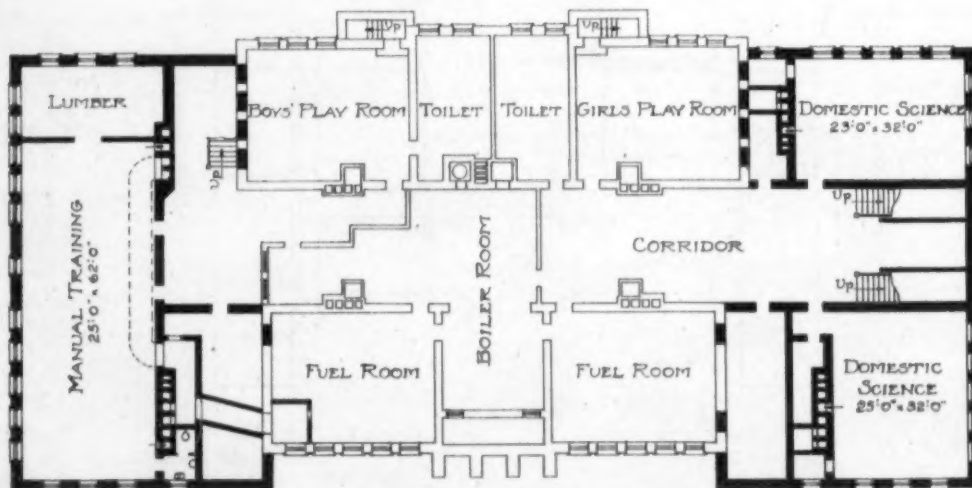
However, the architect succeeded in embodying in this building a great deal of modern and sanitary school equipment and it will be seen that the cost per cubic foot was very low. In the addition to the U. S. Grant School, first cost was not given so much consideration and, therefore, more modern and up-to-date school equipment was embodied in the erection of the building. This fact and the pitched roof construction are the reasons for the higher cubic foot cost of this building.

In the case of the Longfellow School, it was the foregone conclusion that a school was an absolute necessity in that locality. The only question was to erect a building that was complete, modern and up-to-date in every respect.

The first cost was not taken into consideration. In this school can be seen an example of what can be accomplished when the school board members and the building committee of the common council work in harmony and with only one object in view—to obtain the best that money can buy. The members of the school board and the building committee of the council spent many hours in consultation with the architect in regard to arrangement, etc., and the result was a building of plain and pleasing design, modern and complete in every detail. In fact, the school is considered one of the best and most modern in the state of Wisconsin.

The Jefferson School.

In the Jefferson School the architect was called upon to add to a building which was well balanced architecturally. Its main features were a central tower above the main entrance and



Basement Plan, Jefferson School, Sheboygan, Wis.

wings which were exactly alike. In order to retain this balanced appearance, it was decided to leave the old building as the central unit and to add at the opposite ends. A pitched roof to conform to the old building was not wanted and therefore the additions were designed with flat roofs. The general detail of the new sections was made to conform as much as possible with that of the old building and the same materials were used, namely, cream colored Sheboygan brick and Bedford stone trimmings. The new additions provide six classrooms, a large kindergarten, additional toilet facilities and manual training and domestic science rooms.

The large kindergarten which is on the first floor of the west addition is intended to be used also as an assembly hall in case of entertainments. The room is provided with two ample cupboards for supplies and has a wardrobe adjoining it. There are two exits in this addition, one leading to the north and intended for the pupils of the second floor, and one to the south intended for the first floor pupils only. The east addition provides on the first floor two standard classrooms, with adjoining wardrobes. Each classroom is provided with bookcases and a teacher's closet. This addition also affords two exits, one of which contains the main stairways and is intended for the second-floor pupils, and one to the south to be used by the occupants of the first floor.

The second floor of each addition has two classrooms similar to those on the first floor in arrangement and equipment. Large toilets are also provided on this floor.

Stairways from the vestibules of the north and east entrances lead to the well-lighted basement where the manual training room and domestic science rooms are located. The boiler room is located in the basement of the old building and an additional boiler was merely added to the equipment.

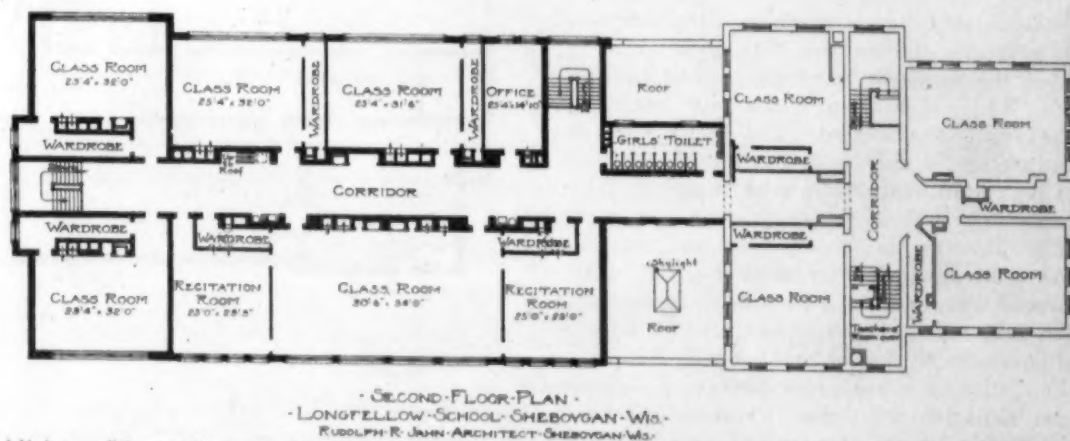
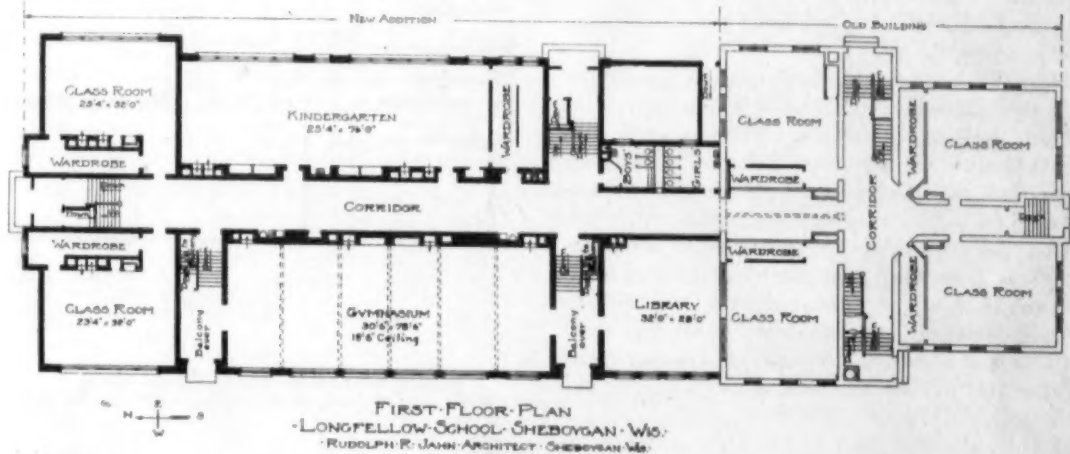
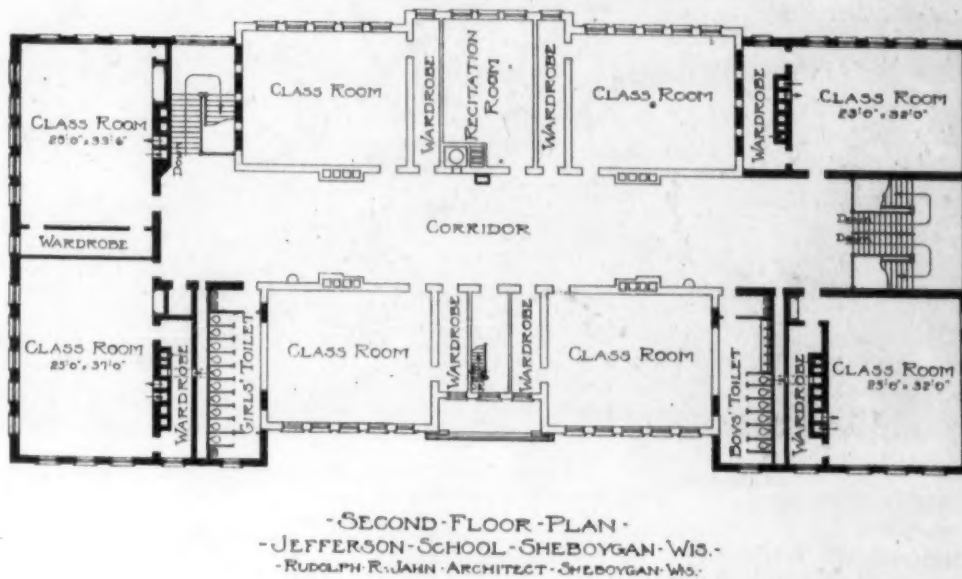
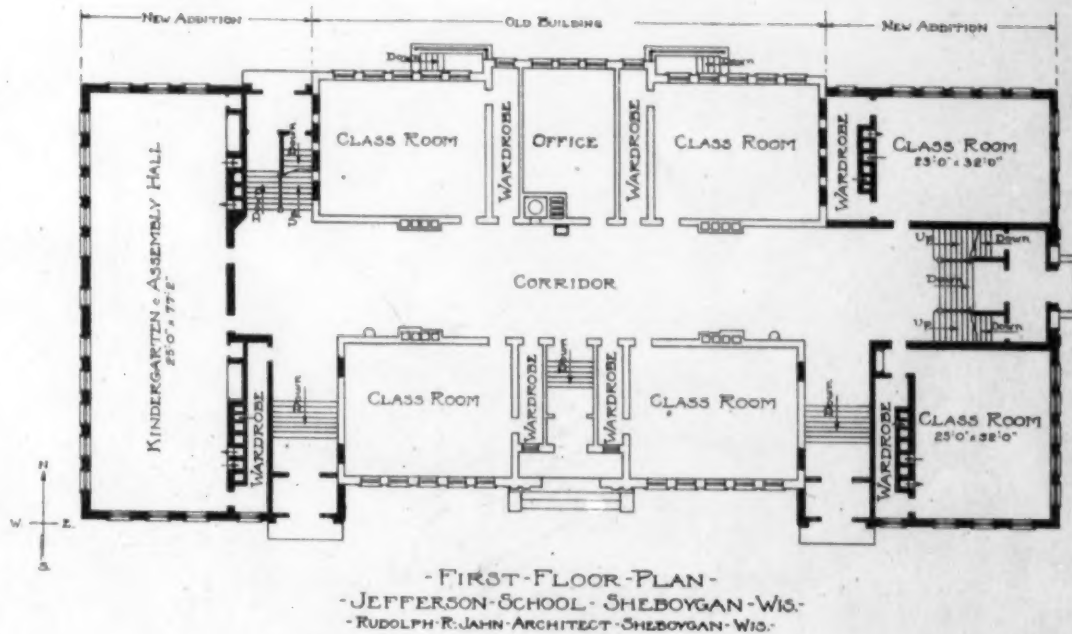
The building is of ordinary construction, wood joist supported by brick bearing walls. The roofs of the new addition are covered with five-ply tar and gravel roofing. The toilet rooms and entrances have terrazzo floors and sanitary base. The balance of the building has maple floors, with the exception of the basement corridor which is of cement. The doors and trim are of yellow pine, the stairways are also of yellow pine, except the treads, which are of maple.

The building is heated by steam with direct and indirect radiation, controlled by automatic temperature regulators placed in all rooms. A gravity ventilation system is used. The indirect radiation is placed in the indirect chambers in the basement, directly below the brick flues leading to the several rooms. The indirect chambers are connected with fresh air rooms, air for which is supplied thru basement windows. The foul air is removed from the rooms thru brick vent flues, which run up to the attic and are there connected by galvanized pipes, to the ventilators located on the roof.

The plumbing is of the best thruout the building and includes sanitary drinking fountains in the corridor of each floor. All sinks and lavatories are supplied with hot and cold water. The girls' toilet on the second floor has a separate compartment for the use of the teachers. All classrooms are equipped with natural slate blackboards.

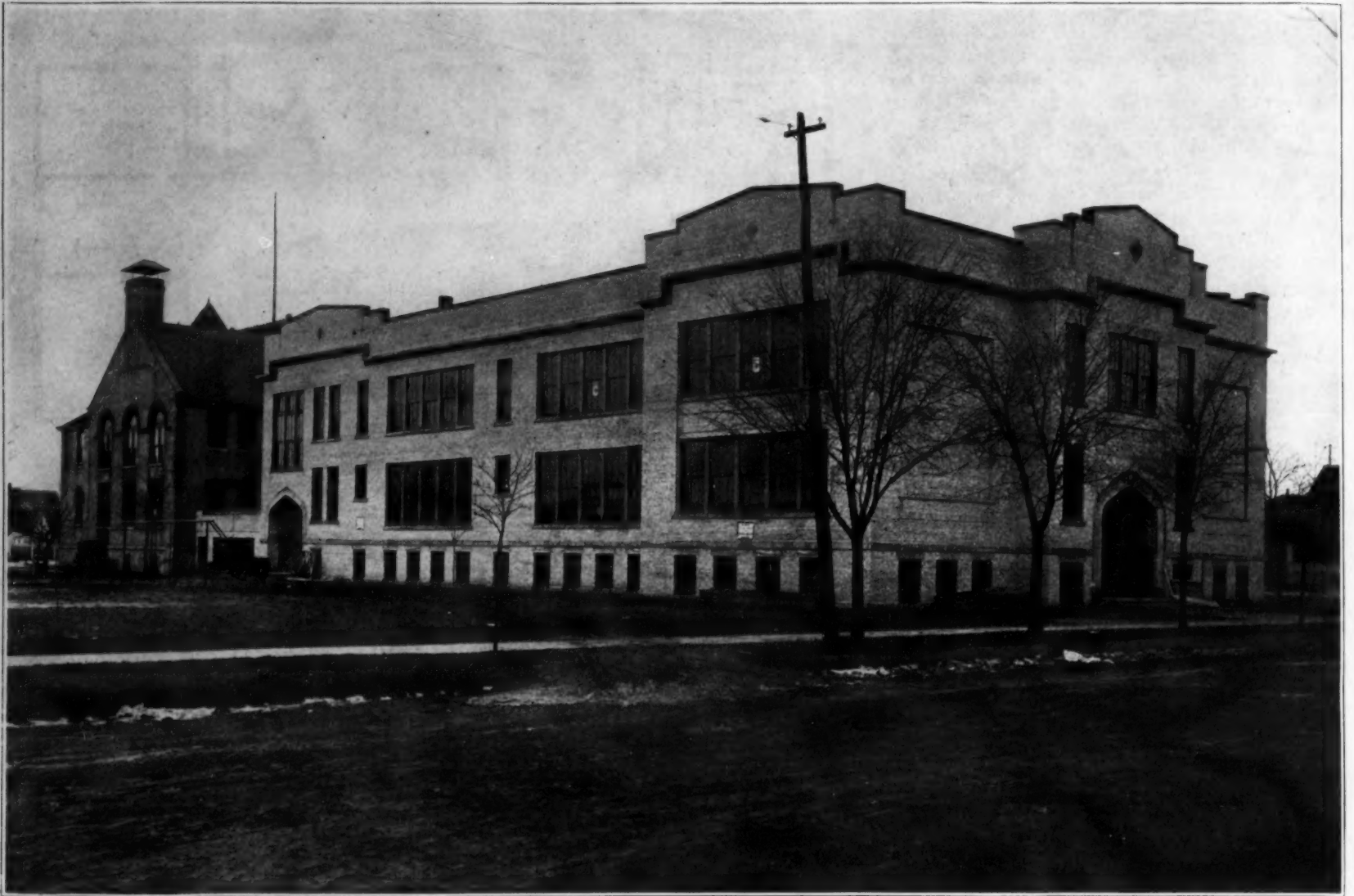
The U. S. Grant School.

The general design of the U. S. Grant School and its location on the lot caused the addition to this building to be erected entirely at one end of the old building. The photograph shows that the addition is designed to harmonize completely with the old building. The same materials as those in the old building were used for the new



addition. The walls up to the tops of the basement windows are Indiana limestone, rock-faced ashlar, and above this are cream-colored brick with redstone trim.

On the first floor of the addition is located a large, well lighted and pleasant kindergarten, with its adjoining wardrobe and stage. The room is intended to be used not only for kinder-



LONGFELLOW SCHOOL, SHEBOYGAN, WIS. Rudolph R. Jahn, Sheboygan, Wis.

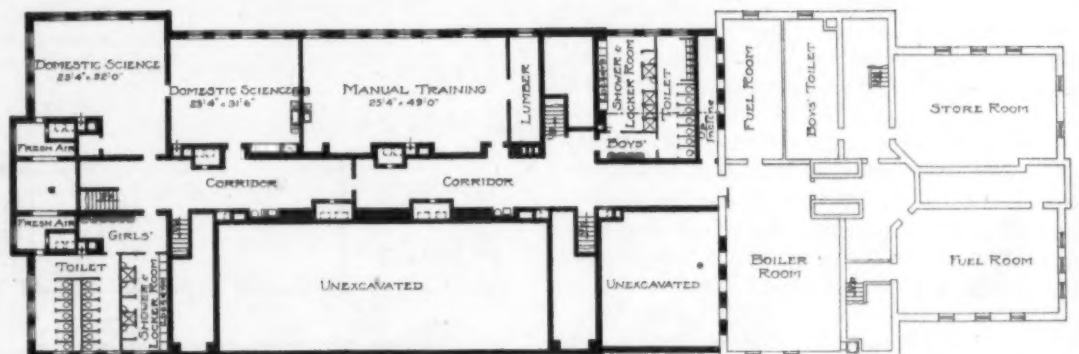
garten purposes but also for school entertainments. Across the corridor from it are three classrooms, each fitted with a wardrobe and bookcases. Two exits are located in the addition and two stairways leading to the second floor.

Directly above the kindergarten on the second floor there is a large classroom which is used as a study hall by the pupils of the seventh and eighth grades. This room is provided with bookcases and two ample wardrobes. The principal's office, a library and a recitation room are located on the opposite side of the corridor. There is here also a standard classroom with wardrobe. A girls' toilet has been provided in the old building and the boys' toilet has been built in the addition. A separate compartment for the use of the teachers is provided in the girls' toilet. The two stairways in the addition lead from the first floor to the attic which is to be fitted up as a gymnasium for the pupils.

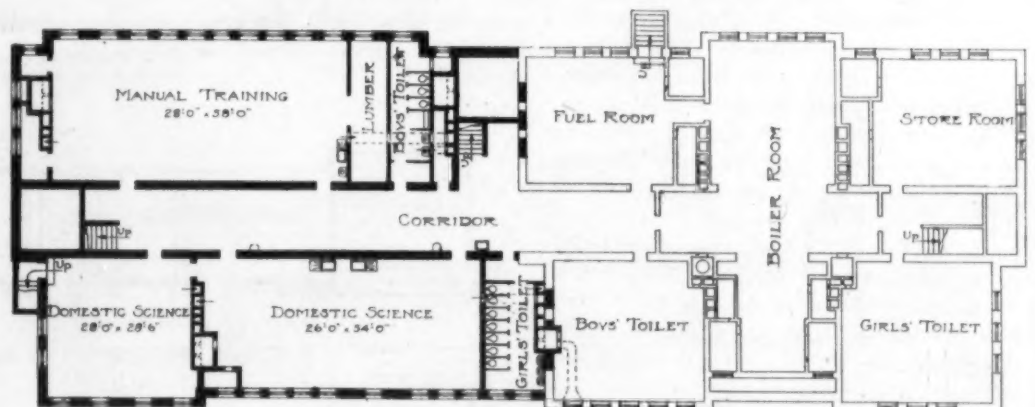
Stairways from the vestibules of the entrances and also one stairway on outside of building, lead to the basement where the manual training room, domestic science rooms and additional toilet rooms are located. The boiler room in this instance is also located in the old building and an additional boiler was added to that already in place.

The building is of ordinary construction, wood joist supported by brick bearing walls. The roof is covered with asbestos shingles. The floors and interior trim is similar in material and character to that of the Jefferson School.

The building is heated by direct and indirect steam radiation, controlled by automatic temperature regulators. A gravity ventilation system is installed and is supplemented in the matter of exhaust of foul air by an electrically driven fan to be used on hot and sultry days.



- BASEMENT PLAN -
- LONGFELLOW SCHOOL - SHEBOYGAN - WIS.
- RUDOLPH R. JAHN ARCHITECT - SHEBOYGAN - WIS.



- BASEMENT PLAN -
- U.S. GRANT SCHOOL - SHEBOYGAN - WIS.
- RUDOLPH R. JAHN ARCHITECT - SHEBOYGAN - WIS.

Fresh air is supplied to the classrooms thru brick flues leading up from fresh air chambers in the basement. The fresh air rooms are supplied with radiation and derive their air supply thru specially constructed basement windows.

The foul air is removed from the rooms thru brick flues which run up to the attic and are there brought together by means of galvanized pipes to a ventilator located on the roof. The plumbing is similar in character and quality to



U. S. GRANT SCHOOL, SHEBOYGAN, WIS. Rudolph R. Jahn, Architect, Sheboygan, Wis.

that in the Jefferson School. The building is lighted with electricity and completely equipped with a bell system.

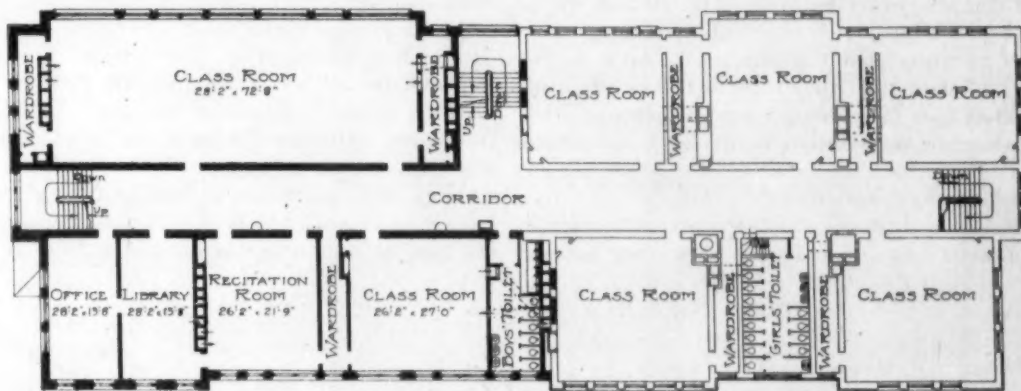
The Longfellow School.

The addition to the Longfellow School is practically an independent building and was planned and constructed as such, with the exception of the corridor as a connecting link. Fire doors are placed in this corridor where the new building joins the old, so that the two can be separated completely. While it is hazardous to make a prediction, a glance at the plan will show how easily it will be possible to raze the old building at some future day and to erect a new section in its place, conforming in style and general character to the present addition.

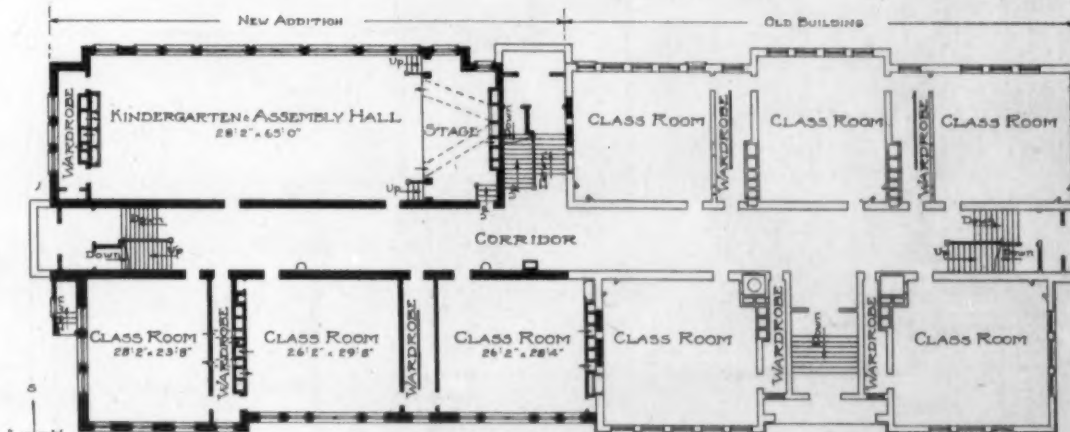
The building as a whole is interesting in that it affords not only a complete elementary school plant but also includes facilities which make it a civic and social center. For the latter purpose, a library has been provided in a space between the new and old buildings and the new structure contains a large gymnasium suitable for auditorium uses.

Aside from the fact that similar materials have been used, no attempt has been made to harmonize the design of the new building with that of the old. The exterior is faced with cream-colored brick, trimmed with Bedford stone, with the exception of the library which has terra cotta panels over the windows and red-stone trim.

The library and gymnasium floor are at the grade level, thus making it possible to use these rooms for evening gatherings without interfering with other parts of the school. Convenient access is had from these rooms to the boys' and girls' shower rooms and toilet rooms which are located in the basement. The ceiling of the gymnasium extends up to the second floor, giving a total ceiling height of nearly nineteen feet. Balconies overlooking the gymnasium are



- SECOND FLOOR PLAN -
- U. S. GRANT SCHOOL - SHEBOYGAN - WIS.
- RUDOLPH R. JAHN ARCHITECT - SHEBOYGAN - WIS.



- FIRST FLOOR PLAN -
- U. S. GRANT SCHOOL - SHEBOYGAN - WIS.
- RUDOLPH R. JAHN ARCHITECT - SHEBOYGAN - WIS.

located above each of the west entrances. The electric light fixtures in the gymnasium are partly concealed between the ceiling joist and are of the Bee-Hive reflector type, with brass

rings concealing the outer portion of the reflector.

The library has a ceiling height of eleven feet and is built as part of the connecting link to

(Concluded on Page 79)

One Phase of the Schoolhouse Problem in Pennsylvania

HuBert C. Eicher, Assistant Secretary, Pennsylvania State Board of Education.

Since the entrance of America into the war two years ago many of the 2586 school boards of Pennsylvania have experienced unusual difficulty in providing housing accommodations for the boys and girls of school age. Adequate school housing, especially in rural and semi-rural districts, has been a problem for many years, but the building restrictions made necessary during the period of the war imposed a still more difficult task upon many districts particularly those where the student body growth is steady and permanent and where an abnormal growth was caused by a transfer or an establishment of new industries which contributed directly to war interests and activities.

In order to meet the emergency some boards reverted to the erection of portable and the most temporary structures and even to the renting of second floor storerooms. They invested all of the available funds in a housing which is already inadequate and soon to be abandoned on account of depreciation caused by cheap and faulty construction and a light and poorly devised framework. These temporary quarters serve only for the immediate present and do not offer an ultimate solution to the school housing problem.

And not only during the war emergency have boards made this a practice but for several years prior to the war-conservation rulings many districts, especially rural, have provided only the most temporary types of structures when emergency demanded increased accommodations. As a result we find the school buildings in these localities in a deplorable condition and the district without sufficient funds to replace them.

In almost every county of the State the portable and temporary building is in use and while it serves its purpose—immediate and temporary relief of congested conditions—in some localities, it does not solve the financial problem which is now facing many school directors who say they see no solution to the pressing situation. Actual survey made by the State Board of Education reveals the fact that in rural districts where little or no local supervision of the erection of portable and temporary schoolhouses

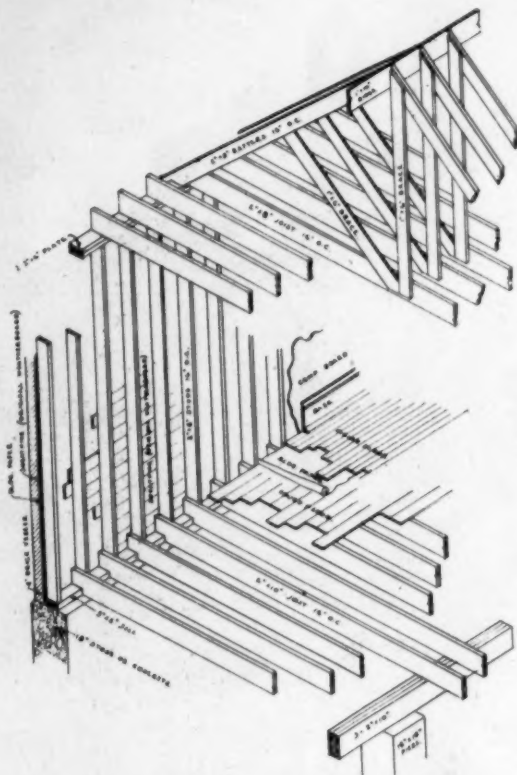


Diagram 1. Isometric Drawing Showing Interior Construction of Convertible Schoolhouse.

is provided, the life of the building does not justify the investment.

So urgent and pressing has been this phase of the schoolhouse problem in Pennsylvania that two years ago a survey of the situation was begun, under the direction of Dr. J. George Becht, executive secretary of the State Board of Education, and as a result the State Board of Education has produced a Convertible Type of Schoolhouse which is solving the problem in districts where it has been adopted. The plan is flexible, provides for small or large accommodations commensurate with the needs of the district, and its erection is feasible in any locality. The statement that it is the most economical type of complete schoolhouse is fully just-

fied when it is learned that in August, 1918, when building material and labor prices were at their maximum, a contract was awarded by a Pennsylvania school board for the erection of a six-room building from the plan at a cost of \$1,495 per classroom.

The district awarding the contract had lost the former building by fire and had less than \$9,000 available for replacing the burned structure. The Convertible Type was the only satisfactory solution to the problem in this district.

In this and other districts where the Convertible Type of new structure has been completed, the plan is operating most satisfactorily; it provides adequate school accommodations and insures modern school facilities for many years. The conversion from the original or Convertible Type to the permanent structure can be effected without alteration-expense, and can be carried out at such times and intervals as conditions and local school finances warrant.

The following is a brief description of the new type of building and the diagrams include the six-room schoolhouse referred to above.

The Convertible Type of schoolhouse is not a portable or temporary structure. A study of Diagram 1 will show that a permanent framework is provided thruout, 2" x 6" studs being used, centered and braced in accordance with standard building construction. This standard framework, placed on good heavy sills, insures permanency of construction and provides the basis on which to build for the future. The portable structure does not provide a framework of standard construction.

Besides the permanent framework which is provided another essential factor which has entered into the new design is standardization. This means economy. Before plans were formulated a survey of standard planing mill products was made and only rough and finished materials which are most generally found in standard stock have been specified on the plans.

Diagram 2 shows a section of concrete or stone foundation. If the finances of the school district prohibit the placing of a stone or con-

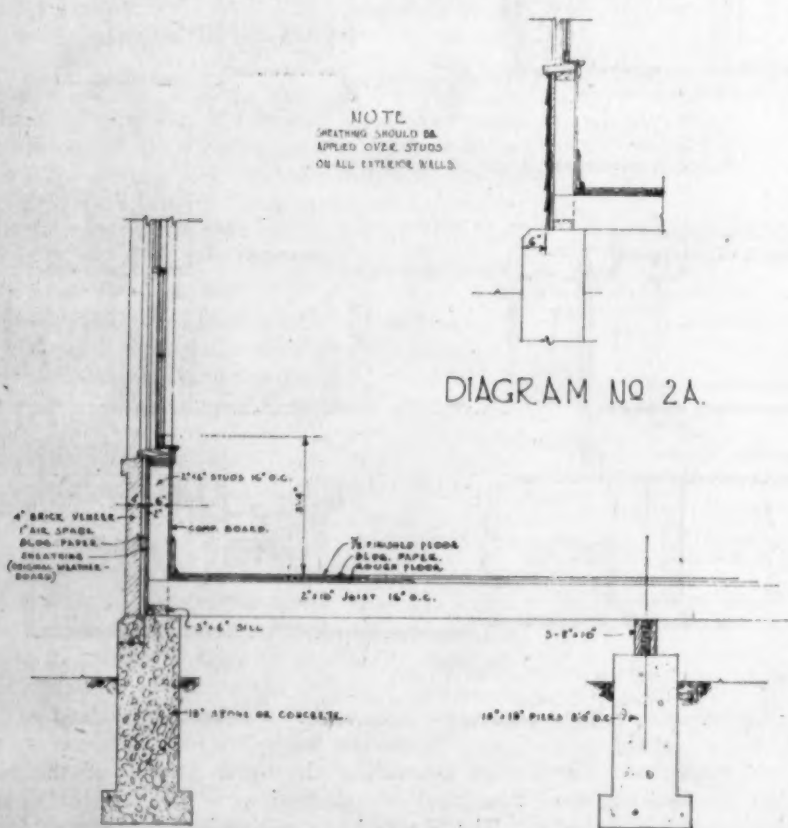
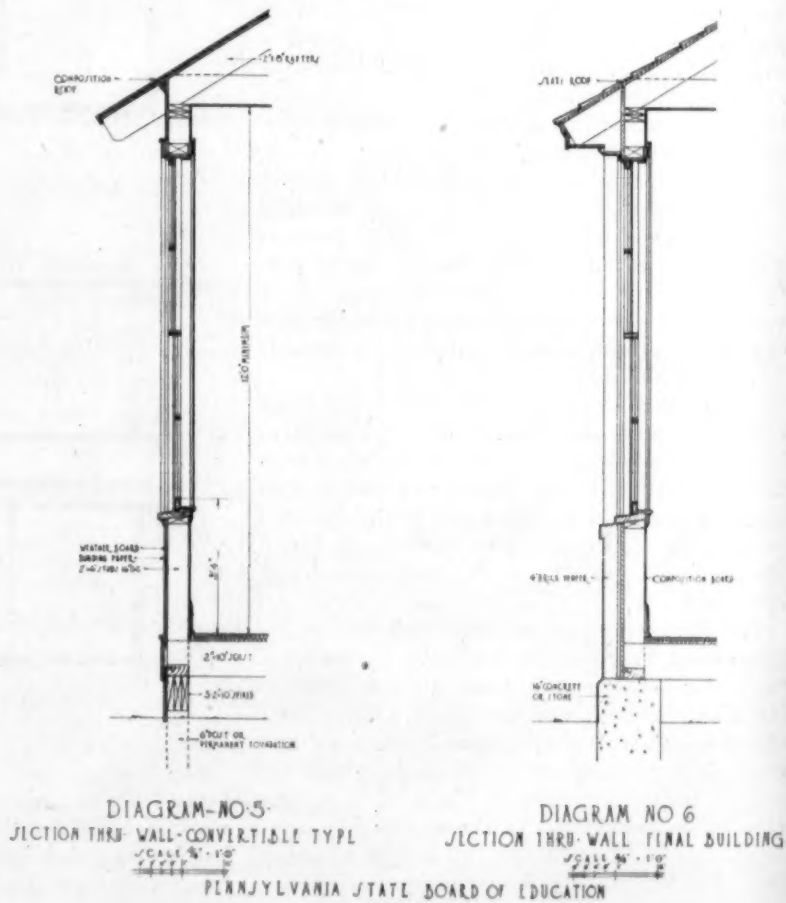


Diagram 2. Cross Section of Construction, Convertible Type of School Building



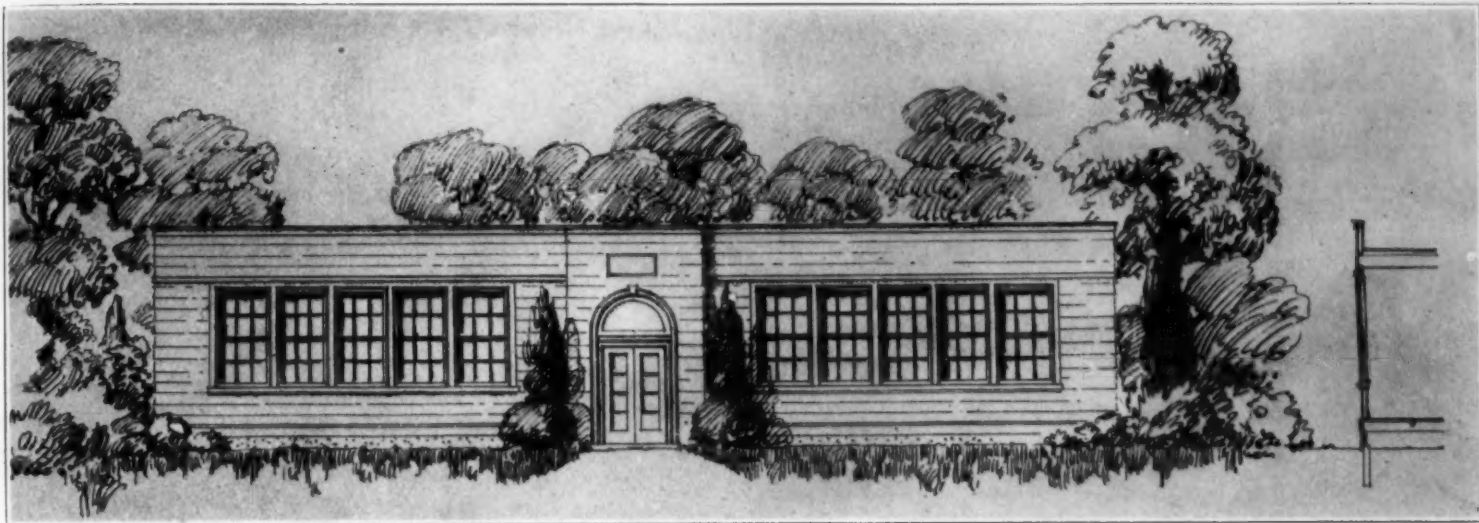


DIAGRAM 3. FRONT ELEVATION AND SECTION OF BUILDING WITH FLAT ROOF.

Diagram 4.

crete foundation when the convertible building is erected, cedar, locust or other available posts, well sunk, may be substituted. These will serve indefinitely. If, however, the board elects to build the permanent foundation when the erection of the convertible is begun and the intention of the school board is to finish the exterior of the building in brick veneer at some future time, a six-inch projection should be allowed on all foundation walls. Otherwise the projection will not be necessary.

The rubberoid, asbestos shingles or other composition roof employed on the Convertible Type will serve for many years. The plan provides a construction for a slate roof, ultimately, without change or alteration-cost. Diagram 1 shows the framework and size of material used in the roof construction. The elimination of change and alteration-cost is a special feature of the plan which has been worked out on both the exterior and interior. Alteration-cost on additions to existing schoolhouses cost approximate-

ly, one-fourth of Pennsylvania's total school building investment for the year 1916-17 which amounted to \$10,000,000. This practice is a needless and unwarranted waste and should be eliminated. The design of construction in the Convertible Type eliminates this wasteful practice.

Where maximum economy is necessary the flat roof will reduce the cost of the building and will not in any way interfere with the building proper or future expansion. The standard high roof design, however, adds much to the appearance of the schoolhouse and should not be replaced by the flat roof except in districts where the topography of the school site necessitates a plan which will accommodate a second-story future addition. For all one-story buildings, especially frame structures, the standard roof is recommended.

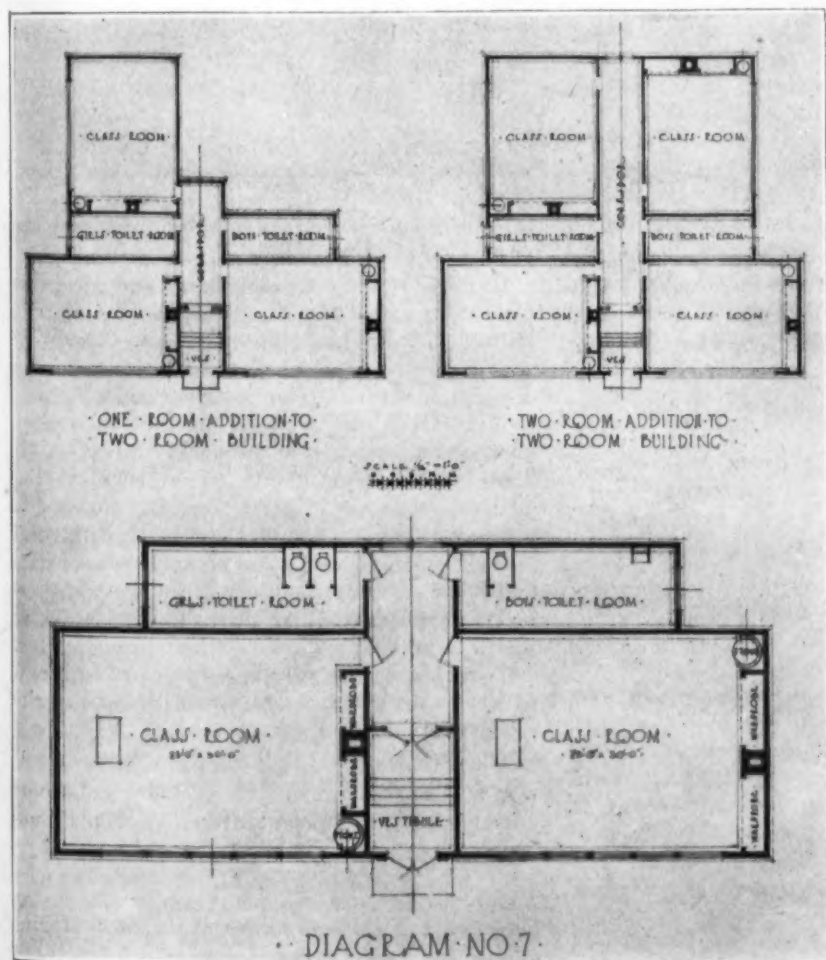
Elevation and section of building with flat roof shown in Diagrams 3 and 4.

On the interior of the building lath and

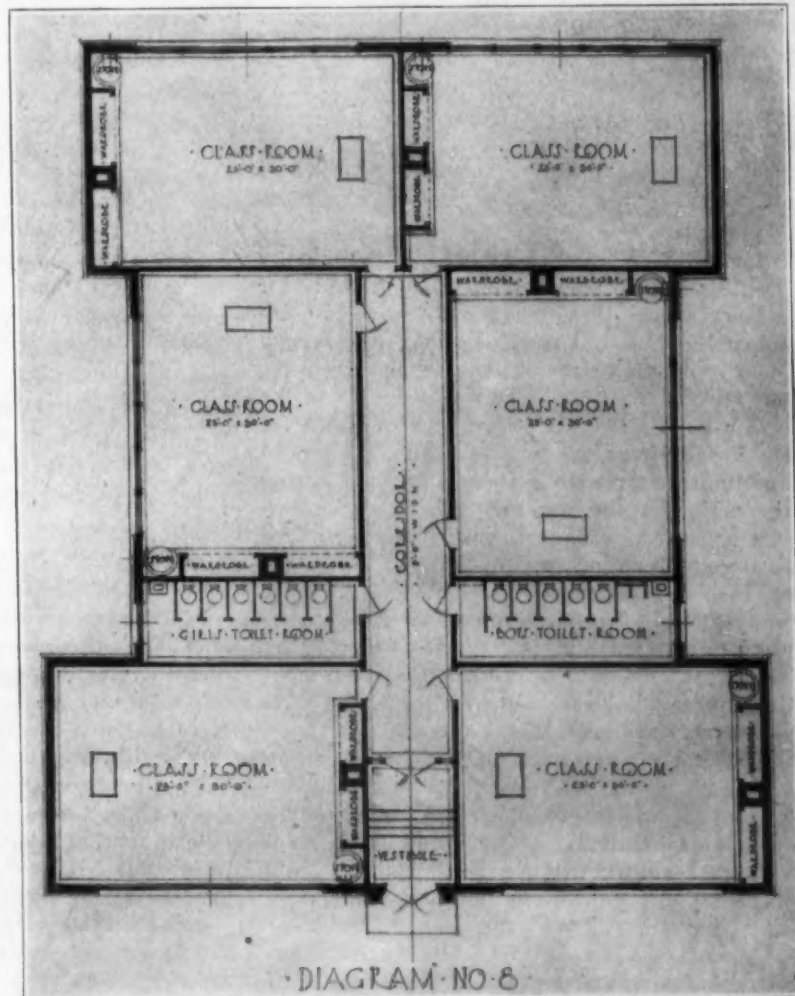
plaster is not used in the Convertible Type. A good quality of composition board is placed directly on the studs and rafters and, being reinforced and double stripped, the lining provides a most satisfactory, durable and economical interior finish.

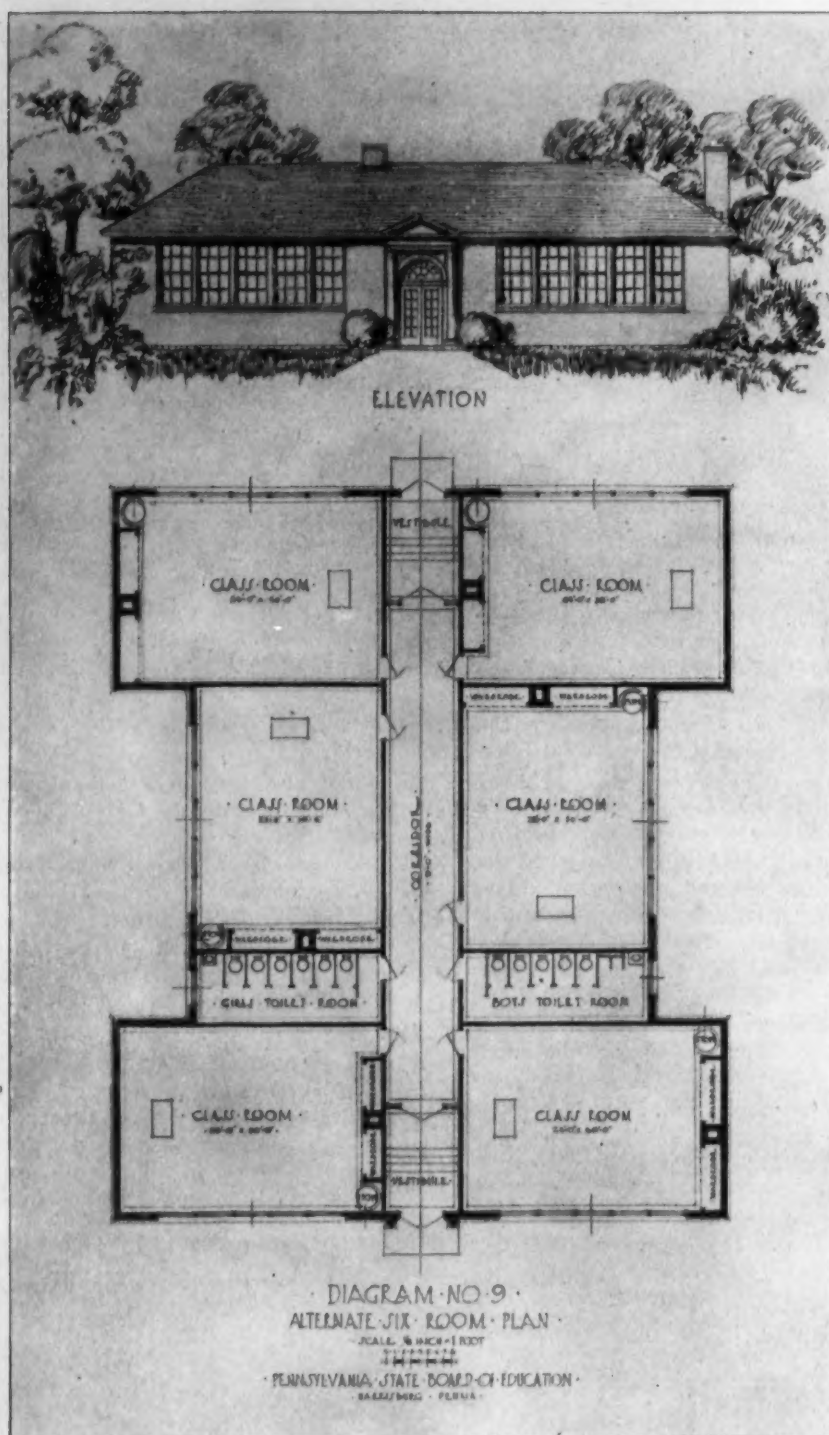
It is not necessary in a general description of this kind to state the details of plan and construction of the new type of building, all of which have been worked out on the detail blue prints for use in erection. Diagrams 5 and 6, however, describe further the plan and also afford a comparison of the construction work and finish employed in the Convertible and the final structure.

Diagrams 7, 8, 9, 10, (see P. 47) and 12 show various units of the Convertible Type. All these have been laid out on the projected plan thereby providing accommodations for future additions without involving alteration-cost. This is a very essential factor in all schoolhouse design, but as yet it is not generally appreciated and



TWO ROOM BUILDING WITH PLANS FOR INTERMEDIATE DEVELOPMENT UP TO EIGHT ROOMS.





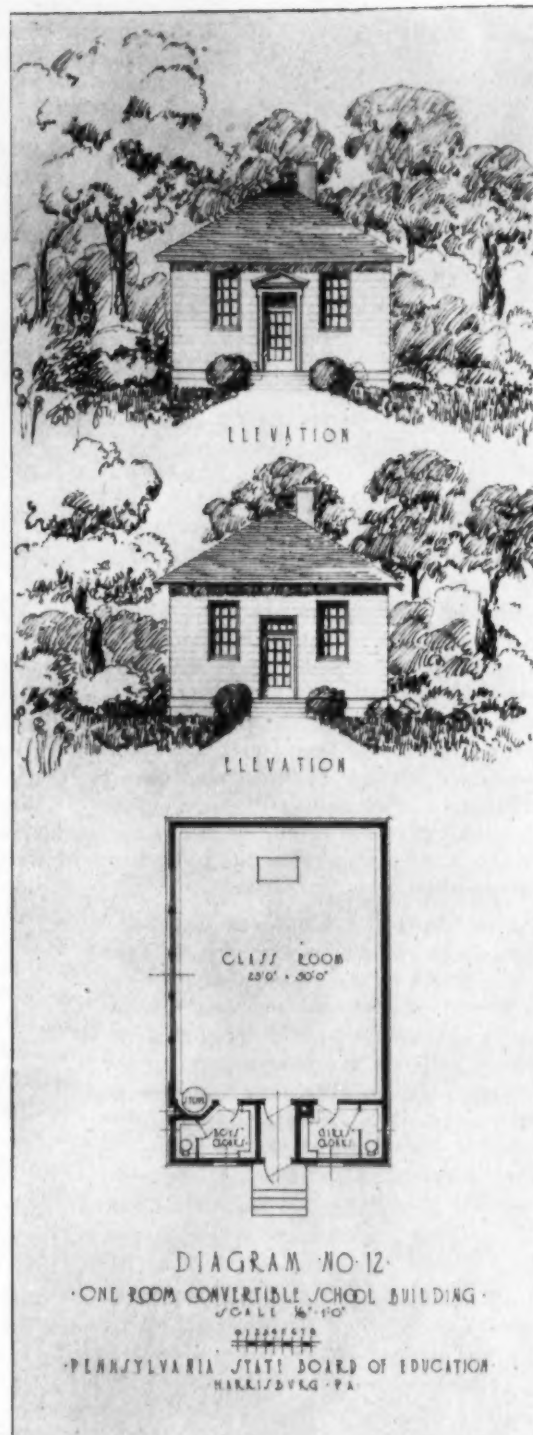
carried out in practice by school officials and architects. Furthermore, all plans provide for modern school accommodations, wardrobes, inside chemical toilets, vestibule, etc. Room Ventilating Heaters are shown on all plans, but are approved for a limited time only in the larger buildings. The emergency approval for the installation of Room Ventilating Heaters in buildings of multiple units was granted during the period of the war and will be withdrawn just as soon as prices on sheet metal work and furnace systems are readjusted.

The close relationship which the present labor and material situation bears to the schoolhouse problem warrants a brief statement of existing conditions and further justifies the erection of the Convertible Type in preference to the more expensive structures.

Master builders in all lines of construction work have stated that a high labor-cost will likely prevail thruout the year. Carpenters are demanding one dollar an hour and sheet metal workers have made a similar demand. From May first and continuing for one year bricklayers have agreed upon an hour-wage-rate of 87½ cents. A rate of 80 cents an hour has been granted plasterers; other departments of skilled labor are making demands commensurate with those above stated.

It is a well known fact that labor is the chief factor in the cost of production. From the prices of labor which have been already established and which are to prevail for several months hence and considering the statement which the manufacturers from the Atlantic to the Mississippi are making, viz.: "Union labor is a unit in standing for a retention of war-time wages and thus far there has been no reduction, and none is contemplated by manufacturers"—we cannot expect an immediate drop in wage rates. This must come gradually.

The most optimistic among those directly affected by this abnormal condition advance the idea that the closing of the war industries and the return of the soldier to civilian life will force a lower wage-scale. Eventually we can expect this, but those who are in close touch with producers and manufacturers who have studied the situation very carefully are convinced that no immediate change is likely to be effected. Regardless of the steady return of men from the army we find the supply and demand for labor in many places about equal, this being effected by a reopening of the industries which were listed as non-essential and closed for the period of the war. Furthermore, shipyard officials say that thousands of laborers



can be employed just as soon as leaders are available.

In view of these extraordinary and unsettled conditions and with no indications of a marked reduction in general building costs, boards of school directors, on whom imperative necessity demands additional classroom accommodations, should follow the example of those who have adopted and are now using the Convertible Type of schoolhouse and who appreciate the advantages accruing therefrom. The conversion to the permanent structure can be made several years hence at such time when the materials and labor entering therein will involve an economic expenditure rather than the unwise outlay which would be required at the present time. This action on the part of school directors will effect a savings of thousands of dollars to the school districts of Pennsylvania.

The situation demands the immediate attention and careful consideration of every director affected by this almost universal school housing condition.

LaSalle, Ill. The school year has been extended one month in order that teachers and pupils may make up time lost during the influenza epidemic. Teachers are to receive full pay for the time the schools are in session.

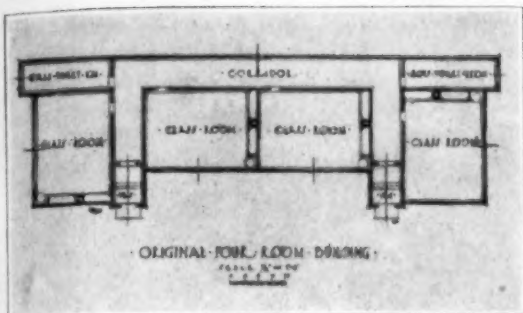


Diagram 10a. Original Building to be Enlarged to 8 Rooms.

UNILATERAL AND BILATERAL SCHOOL LIGHTING

Albert Gehring, Cleveland, O.

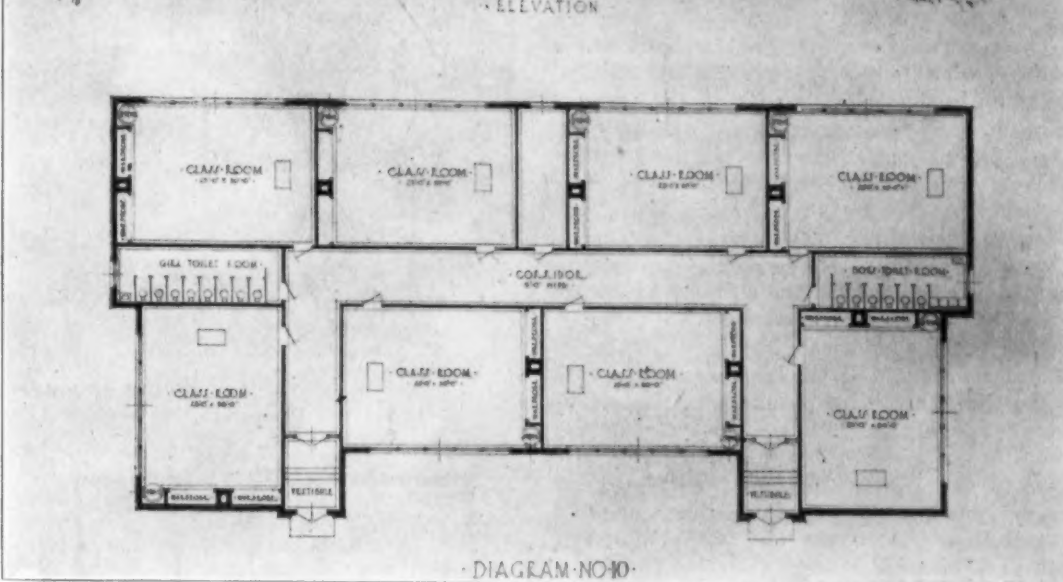
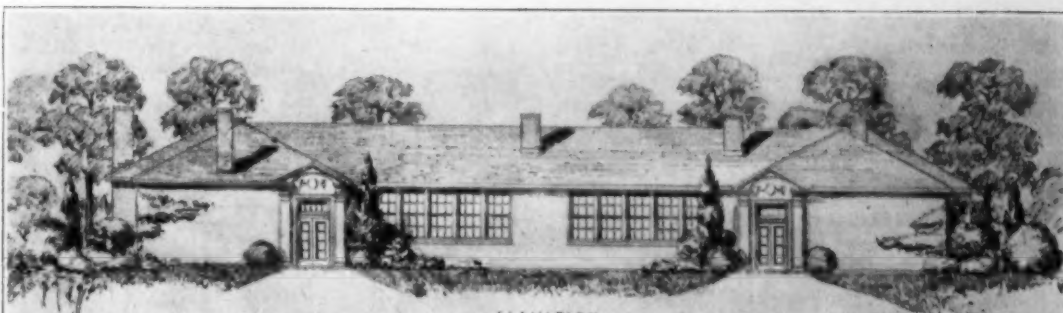
The question as to the relative advantages of unilateral and bilateral lighting for schoolrooms is one which has been discussed for many years. The truth seems to be that there is no simple solution to this question, that the advantages are not all on one side, and that neither system can be pronounced right or wrong absolutely and under all circumstances. Unilateral lighting (from the left of the pupil) undoubtedly has the advantage in the quality of light afforded, but bilateral (left and rear) is superior in the quantity. There is no doubt that the proper source of light is that from the left, as this is the only direction in which there will be no interference from the body and hand of the pupil. Light from the rear will result in shadows thrown on the desk by the pupil's body. Light from the right will produce shadows owing to the hand in writing. Light from the front, on the other hand, is trying on the eyes, which are constantly exposed to the glare of the sky.

There is a difficulty, however, in securing enough light from the left side alone, and in order to achieve this end certain conditions must be observed. It will be necessary, in the first place, to utilize the greater part of the wall for window purposes, with only a moderate amount of space between the individual windows; and the windows must reach well up toward the ceiling. The latter point is especially important, as the light for the inner portions of the room is derived mainly from the higher sections of the openings. But even under these conditions the rooms must not be too deep, or it will still be impossible to obtain sufficient light for the regions in question. Twenty-three feet has been adopted in Cleveland as a proper width.

Placing Windows.

Where these conditions are not met and it is deemed advisable to add some windows in the rear of the rooms, care must still be taken in the case of every room to have the longer axis and greater number of windows to the left. This is necessary, not only on account of the better light thus secured, but also because the width of the rooms, on which the lighting of the inner rows depends, is kept within reasonable limits. If a corner room has five windows to the left and four in the rear, architectural symmetry will make it natural to match this room, at the next corner, with one in which the conditions are reversed and there are only four windows to the left and five in the rear. This can be avoided, however, by a proper arrangement of cloak rooms, and the longer axis can in every instance be made to coincide with the lateral walls of the room.

There are certain incidental advantages to both the unilateral and bilateral systems, which it may be well to enumerate. In the case of bilateral lighting the rooms are more cheerful and friendly, those with light on a single side



Eight Room Building with Sloping Roof. (Enlarged from Four Rooms).

having something restricted and prison-like about them. Furthermore, where window ventilation is used—and this is the case everywhere in mild weather—it can be managed more easily, and with a better avoidance of drafts, if there are two sides of the room to utilize rather than one.

A Special Advantage of Unilateral Lighting.

Unilateral lighting has an advantage in the fact that it is less trying on the eyes of the teacher, who is otherwise obliged to face the light from the rear windows. But there are several other weighty advantages from a structural point of view, important especially in big cities. Here the necessity constantly arises of providing annexes for existing buildings, which fact must naturally be held in mind already in the planning of the original structures. Now, where bilateral lighting is used it will be impossible to join the annex directly to the old part, as some of the windows would thereby be lost. The only feasible plan will be to locate it sufficiently far off so that it will not interfere with the lighting of the other part, and connect it with the latter by means of a passage-way. This means added expense for the passage, additional land for the space between the buildings (which is but ill adapted for playground purposes), and the general inconvenience of a separation of buildings. In the case of unilateral lighting all this can be avoided. The annex can be joined directly to the original building, without any of the disadvantages enumerated.

A similar advantage accrues from the saving of ground space necessary for protection from the darkening effect of neighboring structures. With bilateral lighting there will generally be window exposure on all sides. The lot must therefore be large enough in every direction to guard against light obstruction, not only from actually adjoining buildings, but also from those that may possibly be erected in the future. This means considerable space on all sides. With unilateral lighting, however, it is necessary to have space only in the rear. The rooms being so arranged that the windows are toward the front and rear, the front will be protected by

the street, the rear by the schoolyard, while the sides—without windows—can approach as near to the lot lines as other considerations will allow.

Our general result will then be in favor of the unilateral system. We grant certain advantages to the bilateral plan, notably in connection with ventilation. And we realize that certain conditions must be observed if the unilateral scheme is to be successful. But these conditions being met, there are so many advantages to the system, both of an essential and an incidental nature, that we are justified in pronouncing it the better of the two.

A bill has been introduced in the Delaware Senate extending the age of compulsory school attendance from 14 to 16 years. The bill makes minor changes in the compulsory law.

Night schools for the education of those between the ages of 16 and 21, who cannot read or write the English language, are provided in a bill recently introduced in the South Dakota legislature. The law provides for compulsory attendance of all persons placed in this class.

A bill has been introduced in the New York State Legislature providing for the amendment of the city charter to permit the election of school board members of the city of Buffalo by popular vote instead of appointment. The bill seeks to make the school board directly responsible to the voters, with election by the people, and power to make the school budget and to levy the taxes for school support.

The state of Arkansas will shortly change its form of school organization for counties. A law has been passed organizing county boards of education to have general supervision of educational affairs, and to elect county superintendents of schools. The bill removes the superintendency from the influence of politics.

The thirtieth legislative assembly of Oregon, at its last session, passed a number of educational bills, five of which are considered highly important by the school authorities of the state. These laws provide for the following innovations and improvements in school conditions: Acceptance of the Smith-Hughes act for vocational education; establishment of part-time schools; minimum salaries of \$75 a month for teachers; minimum fund of \$620 for school districts; raising of the per capita tax for elementary schools from \$8 to \$10, and an act providing that the high school tuition law shall be effective in all counties except those having central county high schools.

TWO RURAL SCHOOLHOUSES.

During the past two decades rural schoolhouse of the one- and two-room type have developed along lines providing for greater comfort and health of pupils and teachers. The efforts of educators, architects and builders have been limited almost entirely toward making the lighting, heating and ventilation ample and correct and toward rooting out the common mistakes which made the old-time country school as ineffective and dreary a place for teaching as could be devised.

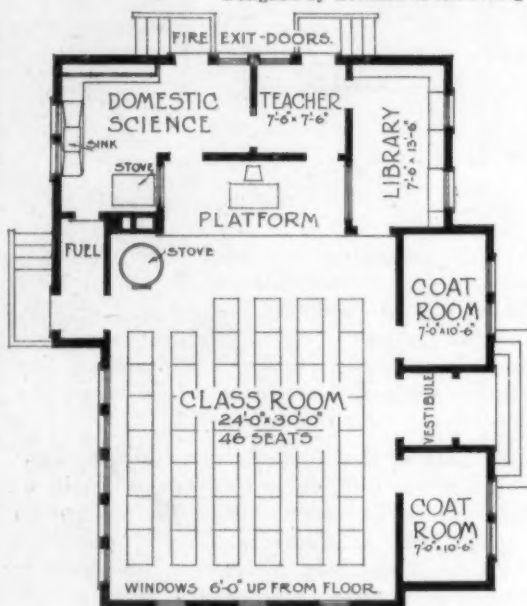
The next development which must come in country school planning is in the direction of meeting the immediate needs of two distinct forms of educational activity in which the rural school is engaged. The first of these is the teaching of manual training and domestic science and the use of reference books and other supplementary literature for academic work. These types of instruction cannot be carried on adequately in the ordinary classroom and suitable space and equipment are as much needed in the country for the small groups of children as they are in the large city school with its bustling masses of young humanity. The boy who is making a milk stool or a seed testing frame, as a manual arts project, must have space to move about. His hammer blows and saw cuts must not disturb the children engaged in a reading lesson. So, too, the girl who is cooking a chop or baking a loaf of bread deserves a clean, fit place to work.

The second use to which the rural school is being put is of most interest to adults. It includes various activities commonly termed as social and civic and has grown enormously in recent years. The war with all its evils, brought many splendid returns, domestic as well as international, and one of the most interesting, if least discussed, is an immense impetus to the rural community center idea. Just here the country school has shown its immense power and in doing so has uncovered the shortcomings of the rural schoolhouse. "If we only had a platform at the front of the classroom" and "if we could join two rooms by means of a sliding door" are exclamations frequently made when a patriotic gathering has been held. The actual changes and additions required to turn an average country school into a flexible, widely useful little community house are so small and the cost is so reasonable that there is hardly an excuse for not doing it.



MODEL RURAL SCHOOL FOR ONE TEACHER.

Designed by Division of Rural Engineering of the U. S. Bureau of Public Roads.



FLOOR PLAN OF MODEL ONE-TEACHER SCHOOLHOUSE.

Two Helpful Plans.

In this connection two plans for country schools, prepared by the Division of Rural En-

gineering of the United States Bureau of Public Roads, deserves study and wide consideration by district and county boards of education. The plans provide for buildings that reflect the latest needs and activities of the country schools and they contain features not frequently met with even in the best rural districts.

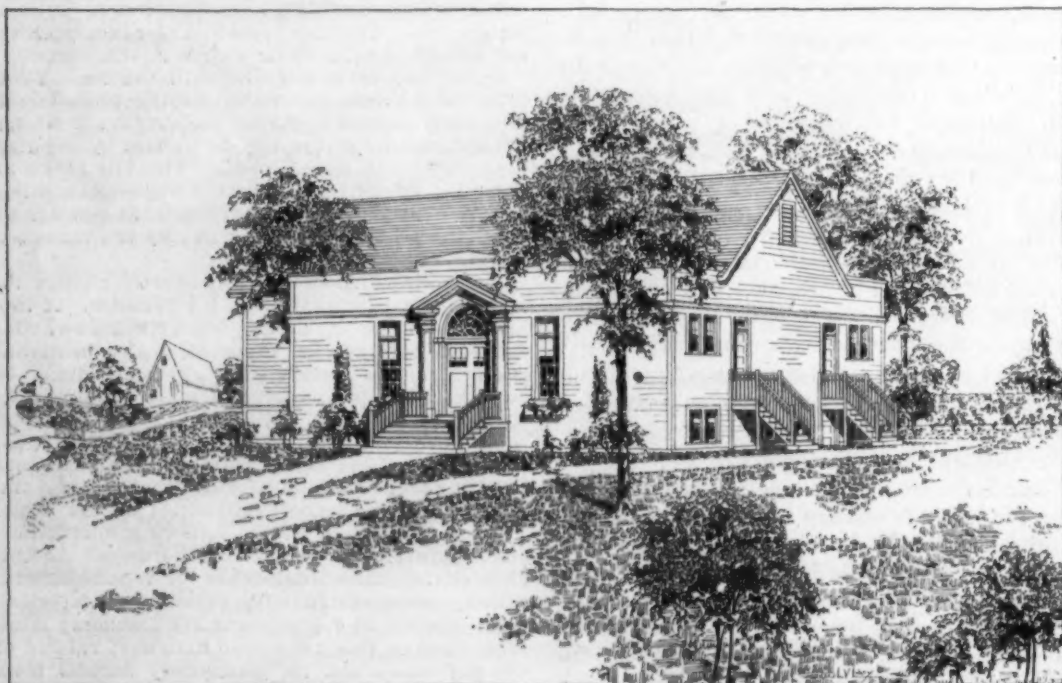
The one-room school illustrated is complete with a well-lighted and thoroly-ventilated classroom which has a capacity of 46 pupils. There are five large windows at one side, extending almost to the ceiling, while at the rear there are three large windows. The school is heated by a jacketed stove, the flue of which adjoins the ventilator intake, so that a forced draft and a continual circulation of fresh, warm air is produced.

It is far more than a one-room school. A comfortable library and a domestic science room are thoroly usable and a small retiring room for the teacher is a convenience not only for the teacher herself but also for the children in cases of illness. These rooms are slightly elevated above the classroom proper and are on a level with the teacher's platform. A feature of the three rooms is the use of small glass partitions and glazed doors thru which the teacher can see into each room and can observe the children at work or study. Two coat rooms are provided, ample in size for the hanging of outer clothing and sufficient also to allow of the storage of extra chairs, etc. The fuel room adjoins the stove so that wood, coal and ashes can be efficiently handled. A notable feature of the plan is the use of exit doors from the special rooms so that in case the room or building takes fire, the building can be emptied in a moment.

The building offers every possible facility which a small country school can offer for community as well as school use. It is practical and direct in arrangement and contains absolutely no useless space.

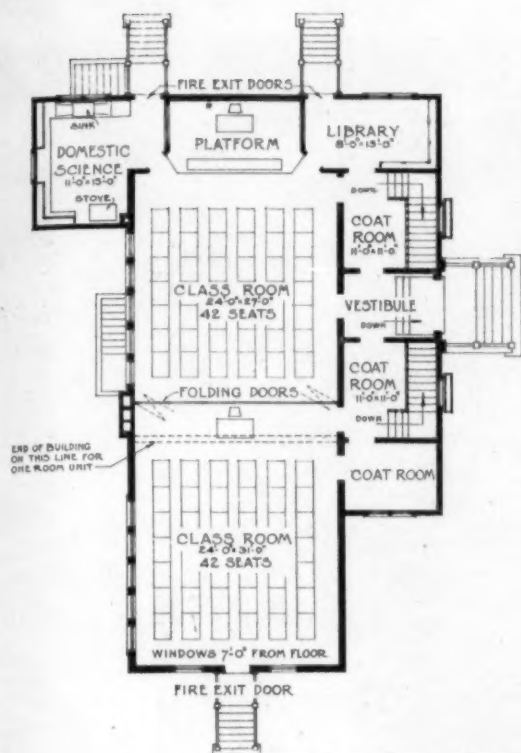
The Two-Room Building.

For the service of those country communities which demand a larger school than the one just described, the government engineers recommend the two-room plan illustrated on this page. The building is sufficiently large to accommodate 84 children in two classrooms. The two rooms may be opened up into one large room by means of a folding door which is placed between them. The general arrangement of the building is similar to that of the one-room school, except that the basement is used for the

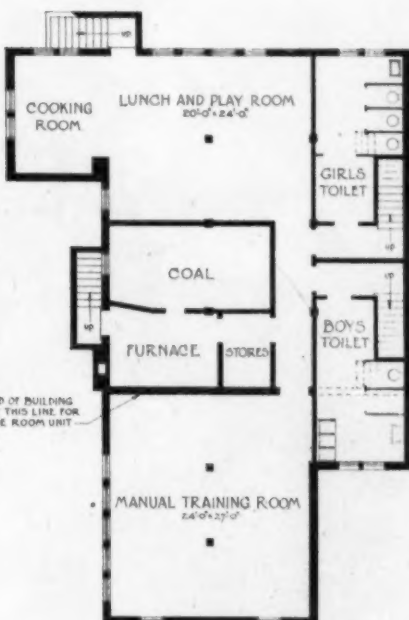


MODEL TWO-TEACHER SCHOOLHOUSE.

Designed by the Bureau of Road Engineering, U. S. Department of Agriculture.



PLANS FOR MODEL TWO-TEACHER RURAL SCHOOLHOUSE.



manual training room, a lunch and playroom and separate toilets for the sexes. As in the case of the smaller building the coat rooms adjoin the vestibule and the library and domestic science room adjoin one of the classrooms. Both the library and the cooking rooms are accessible from outdoors without interference with the balance of the school so that these

facilities may be used independently of the school proper.

By simply omitting the classroom at the bottom of the floor plan illustrated, a one-room school can be built which is suitable for all purposes in a growing district and which can be enlarged without further alterations.

TEACHERS' SALARIES

H. S. Magill, Field Secretary of the N. E. A., Washington, D. C.

To Superintendents and Boards of Education:

The time is approaching for the election of teachers and the fixing of their salaries for the ensuing school year. The recommendation of the superintendent and the action of the board on this important subject will, in every case, affect not only the teachers concerned, but particularly the welfare of the children, and, in a broad sense, the cause of education generally. Permit me to call your attention to a few facts which bear upon this subject.

The National Education Association is deeply interested in teachers' salaries because of the vital relation of this subject to the welfare of the schools. The N. E. A. committee on teachers' salaries, tenure and pensions, under the chairmanship of President Joseph Swain, made a valuable report on this subject which was published in July, 1918. The association has continued its investigations, and from the latest data obtained, supplementing the reports of the Railroad Wage Commission, the War Labor Board, the Bureau of Education, and other authorities, it can be shown conclusively that under existing economic conditions teachers' salaries are entirely too low.

From the U. S. Bureau of Education Bulletin No. 4, 1919, we quote the following: "Salaries of teachers are so low that they offer neither incentive to professional preparation nor encouragement to long tenure. Moreover, the new and more lucrative opportunities which the war has made available to teachers have made serious inroads on the profession. It can not now be expected that qualified persons will continue to teach, or that capable ones will prepare for teaching, unless radical and sweeping changes are forthcoming in the salary scale."

The Bureau of Education has made an estimate, based on a nation-wide investigation, that there were at least 50,000 vacancies in the public schools of the country at the opening of school last fall. One county in Pennsylvania reported fifty-three rural schools without teachers. In addition to these vacancies the Bureau further estimates that there were no less than 120,000 untrained and inexperienced persons placed in teaching positions in order to keep the schools open.

Authorities differ as to the increase in the cost of living. Bradstreet places it at 119 per cent since the beginning of the war; Dun, at 94 per cent; the Labor Bureau at 103 per cent. Ad-

mittedly some items were not considered in making the above estimates, but from a study and comparison of available reports on the subject, an increase of 75 per cent since 1915 might be considered a conservative estimate. The necessity of increasing salaries and wages to meet this increase in living expenses has been officially recognized by the highest authority.

By general order of the Director-General of Railroads, issued May 25, 1918, and based on the investigations and report of the Railroad Wage Commission, the wages of all railroad employees receiving less than \$250 a month were increased. The commission stated in its report that a man receiving \$85 per month on January 1, 1916, should receive an increase of 40 per cent, making his wages \$119 a month in May, 1918, in order to give him the same living he previously had. This conclusion was approved and taken as the basis of the increases allowed. Those receiving less than \$85 per month were given a higher per cent of increase, and those receiving more, a lower per cent, gradually decreasing as applied to higher salaries. This action of the government was accepted as fair and equitable, but what about teachers' salaries which average, at the present time, much lower than the average wage received by railroad employees before their wages were increased?

Statistics obtained by R. C. Moore, secretary of the Illinois state teachers' Association, and published in the February, 1919, issue of the "Illinois Teacher," show that the average monthly wage of fifteen miners for a certain month, taken from the pay roll at the mine, was \$217.78, while the average monthly salary of the fifteen teachers in the same town was \$55. In another town a certain miner, who, by the way, was an Austrian alien, drew more than \$2,700 in wages last year, while the high school principal in that town, an American girl, trained for her work in a university, drew a salary of \$765.

Congress has repeatedly recognized the necessity of increasing wages and salaries in order to meet present economic and industrial conditions. The Johnson-Nolan bill, H. R. 152, providing that the minimum wage of all civil employees of the United States shall be \$90 a month, or \$1,080 a year, has already passed the House of Representatives and is now under consideration in the Committee on Education and Labor in the Senate. Please note that this is a minimum wage and

applies to all employees including watchmen, janitors and charwomen. W. F. Ogburn, statistical expert of the National War Labor Board, testified at the senate-committee hearing on this bill on January 28, 1919, that after a study of some six hundred families in New York last summer, he reached the conclusion that the minimum cost of living of a family consisting of a husband, wife and three children, was between \$1,350 and \$1,400 a year. Continuing, he stated: "Since that time the cost of living has increased in such a way that it could be maintained by both the friends and enemies of this bill that today, in the large eastern cities, the minimum level of subsistence must be about \$1,500."

At this same hearing a petition was presented and placed on record, signed by Judge Landis, Judge Carpenter, and more than a score of other United States officials, praying that the wages of elevator men and watchmen in the federal building at Chicago who received \$60 a month, and also the wages of charwomen, be increased \$1 a day "in order to meet in part the very great increase in the cost of necessities and that Federal employees may enjoy at least a living wage."

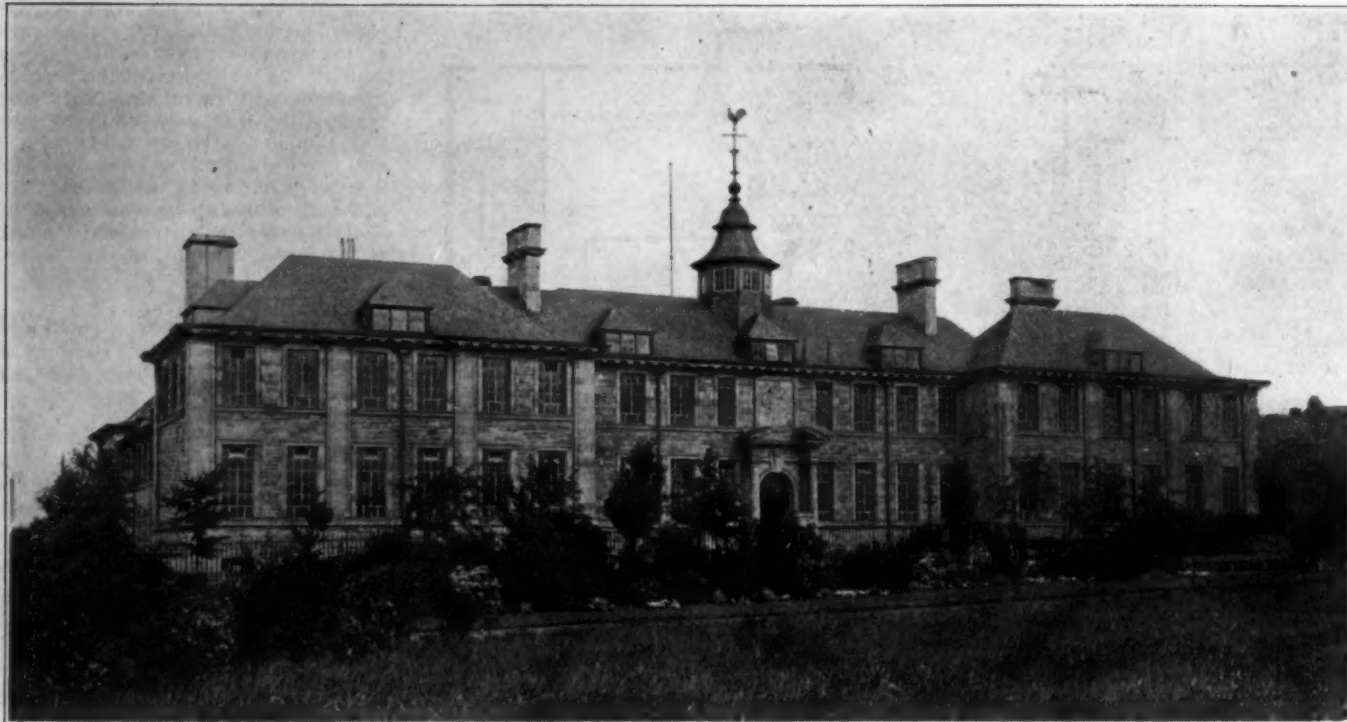
Thruout the country teachers are leaving the profession which, on account of the low salaries paid, is becoming less attractive to capable young men and women. Normal schools and teachers' training schools have fallen off alarmingly in attendance. The situation is particularly serious in rural communities where the salaries of many county superintendents and teachers are appallingly inadequate. One of the ablest county superintendents of Indiana writes: "When a teacher becomes efficient the city pays her more money and naturally she leaves." Continuing, with reference to low salaries, this superintendent declares: "There is one thing certain, the more progressive will not further sacrifice their time and energy, regardless of the fact that they like their work better than anything else and have prepared themselves for it."

Dr. P. P. Claxton, United States Commissioner of Education, in a recently published article, states: "It is only by very large increases in pay of teachers that we may hope to improve our schools appreciably. Small increases of five, ten or twenty per cent will not avail, for they will not be sufficient to hold in the schools men and women of superior ability. Teachers are now paid less for their work than any other class of workers, and the increase in their pay in the last few years has in no wise been in keeping with the increase in pay of other workers, or with the increase in the cost of living. Many of the better teachers are leaving the schools and their places are taken by men and women of less native ability, less education and culture, and less training and experience. As an inevitable result the character of the schools is being lowered just at a time when it ought to be raised to a much higher standard." Continuing, Dr. Claxton declares that the remedy is to increase teachers' salaries until they shall average at least \$1,500 a year.

The right kind of education is absolutely essential to the preservation of our democratic ideals. The recent war, with its terrible cost in money and human lives, was largely the result of the false philosophy of the Germans as taught in their autocratically controlled schools, and the chaotic condition in Russia today is due, in a large measure, to the illiteracy of her people. The Commission on Industrial Relations in the conclusion of its final report declares: "Real social service is the highest attainment the individual can aspire to reach. The state should properly be held responsible for the education of her children, in order that the best possible use shall be made by the greatest possible number of the opportunities of life as they present themselves from year to year."

This very grave situation demands immediate attention. The problem must be solved by those who are responsible for the support and administration of our public schools. State legislatures should furnish the needed revenues, or make it possible to raise the necessary funds by taxation. The responsibility of giving adequate salaries to all teachers rests, in the last analysis, on boards of education by whom teachers are employed. They will be sustained in their efforts to meet this situation by public sentiment which has become aroused to an appreciation of the crisis confronting us.

Immediate action should be taken, not only as a matter of simple justice to the teachers, but for the highest good of the children of our country, and with the purpose of sustaining and strengthening our public school system, so essential to the welfare of our free institutions and all that we as a nation hold most dear.



DALZIEL HIGH SCHOOL, MOTHERWELL, SCOTLAND. Mr. S. B. Russell, F. R. I. B. A., London, Architect.

DALZIEL HIGH SCHOOL AT MOTHERWELL, SCOTLAND

John Y. Dunlop, Esq., Glasgow.

This is one of the few schools in Britain which was started and finished during the war crisis. In August 4th, 1914, the walls had just been set off on the foundations and from that on the work of building the fabric was carried out on the "hurry and wait" principle. There is no reason to wonder now at the short periods of activity and the long spells of waiting for material. Still with all the delays the building was practically finished except the furnishing by the end of 1917.

At that time the military authorities took possession of the building for war purposes with the result that educational authorities had to wait till the end of hostilities before they were allowed to occupy the building. In the interval the school has been decorated and furnished and officially opened.

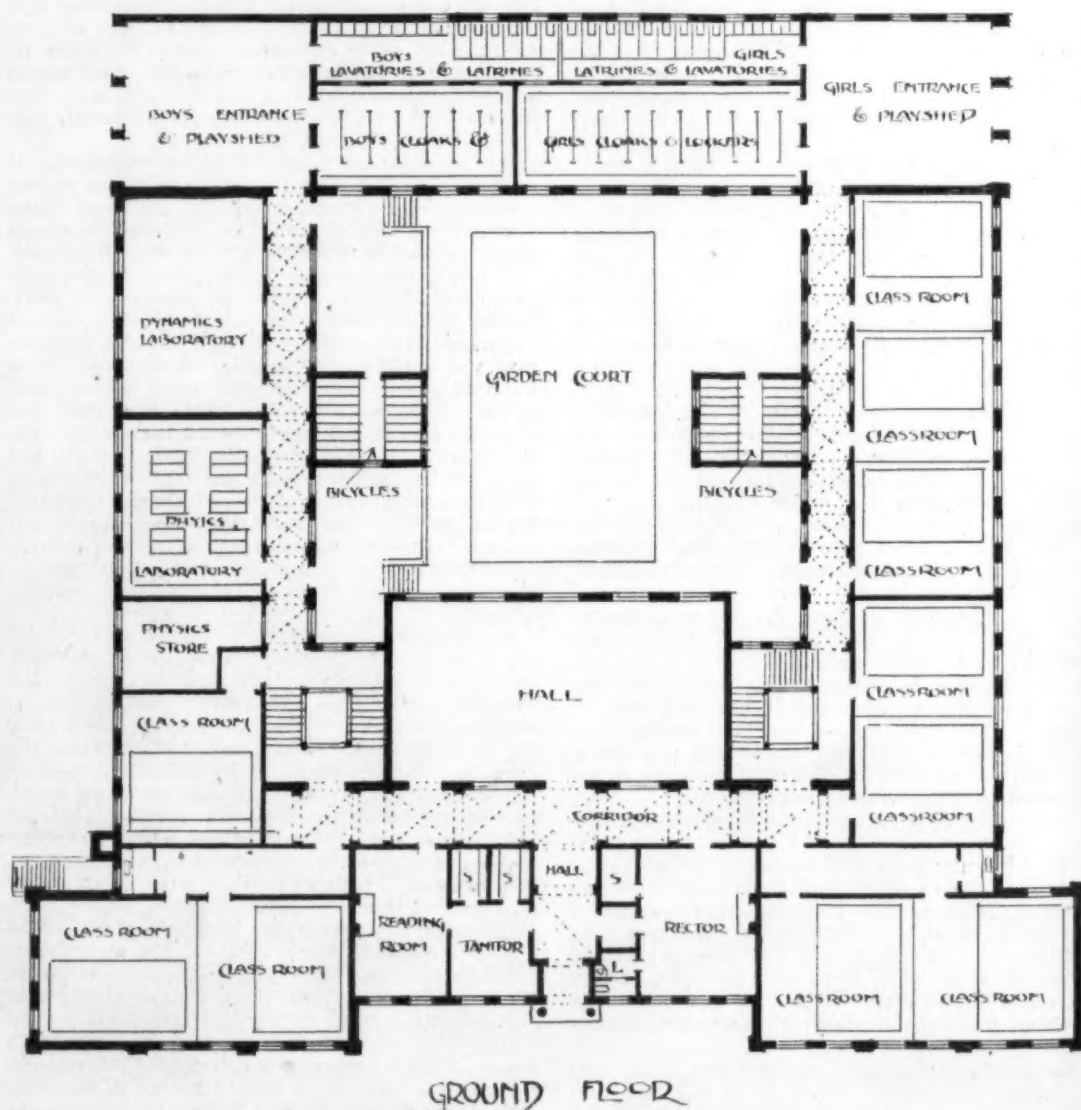
The new school which is situated in one of the busy iron manufacturing centers in Scotland is intended for both day and evening school work and is built on an island site, and facing the Duchess of Hamilton Public Park. The school building has been planned to meet the latest requirement of the educational department, London, and as these requirements in the matter of ventilation are somewhat exacting and revolutionary compared with what has given good service in the past, it is only to be expected that the general arrangements are somewhat different from the familiar type of central-hall school.

A look at the building shows that while the pupils will be working under the very best fresh air conditions this new type of school will also afford them much healthy physical exercise in negotiating its somewhat lengthy corridors. This corridor type of school spreads itself out on the grounds more than the old type of buildings with the result that the present school forms a rectangle of considerable area and has for its center an open courtyard. Around this courtyard and adjoining it are the corridors and opening from them are the doors to the various classrooms whose windows look out from the four sides of the building.

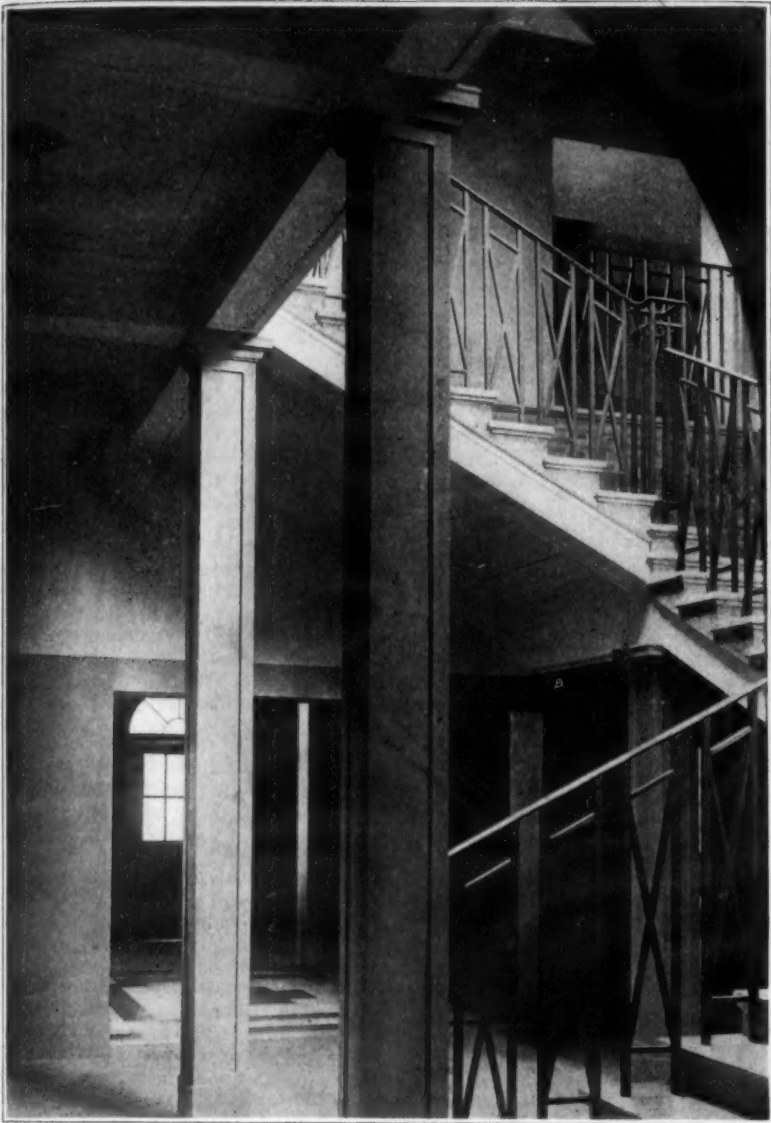
The main entrance is in the front, but the boys and girls have separate entrances from

their respective playgrounds. The laboratories and classrooms are conveniently grouped together for their different uses. The laboratories are on the left-hand side of the front building while the household management group of rooms occupies a prominent position on the op-

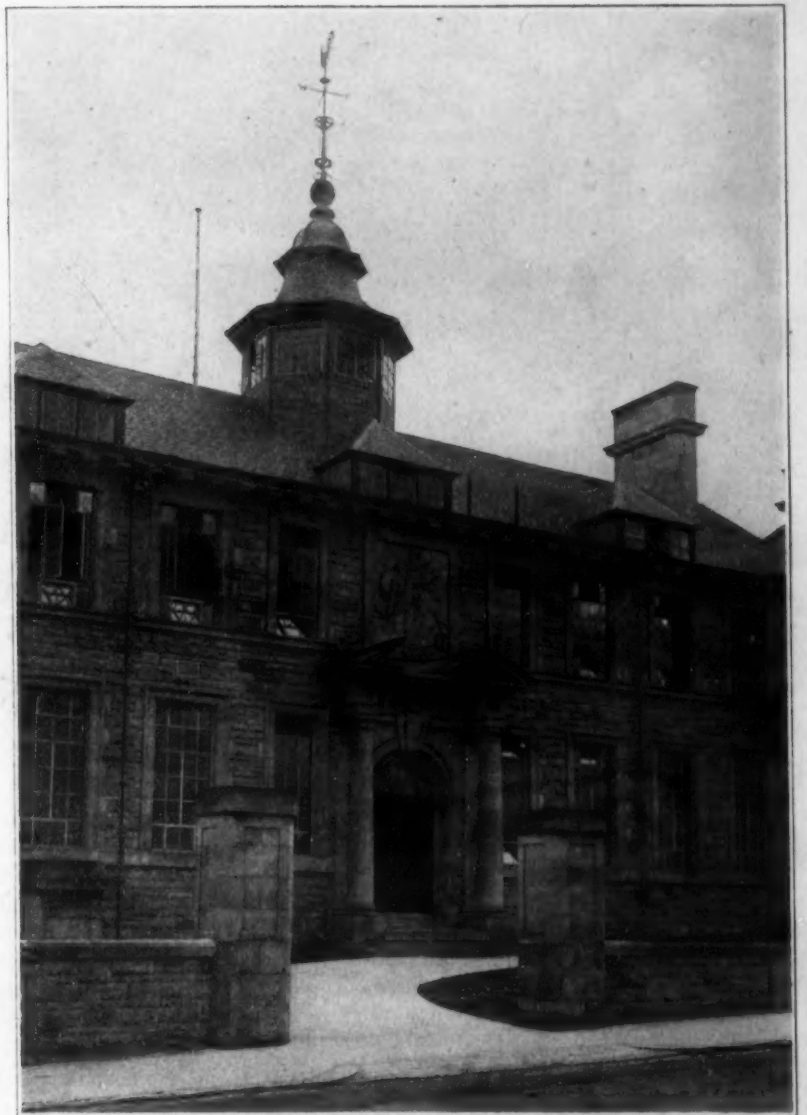
posite side and on the upper floor. The cloak-rooms and lavatories are on the ground floor of the north elevation and cleverly placed over them is the gymnasium. The latter room has a resilient floor and has adjoining it well appointed dressing rooms.



GROUND FLOOR
FLOOR PLAN OF DALZIEL HIGH SCHOOL, MOTHERWELL, SCOTLAND.



DETAIL OF STAIR, DALZIEL HIGH SCHOOL, MOTHERWELL, SCOTLAND.



FRONT ENTRANCE, DALZIEL HIGH SCHOOL, MOTHERWELL, SCOTLAND.

The building has a ground and upper floor with part basement at the southwest corner where the workshops and heating rooms are placed. The accommodation of the school is for 600 boys and girls.

The main fabric of the building is in red sandstone and the roof is covered with small gray slates. The windows are fitted with steel casements all parts of which are made to open.

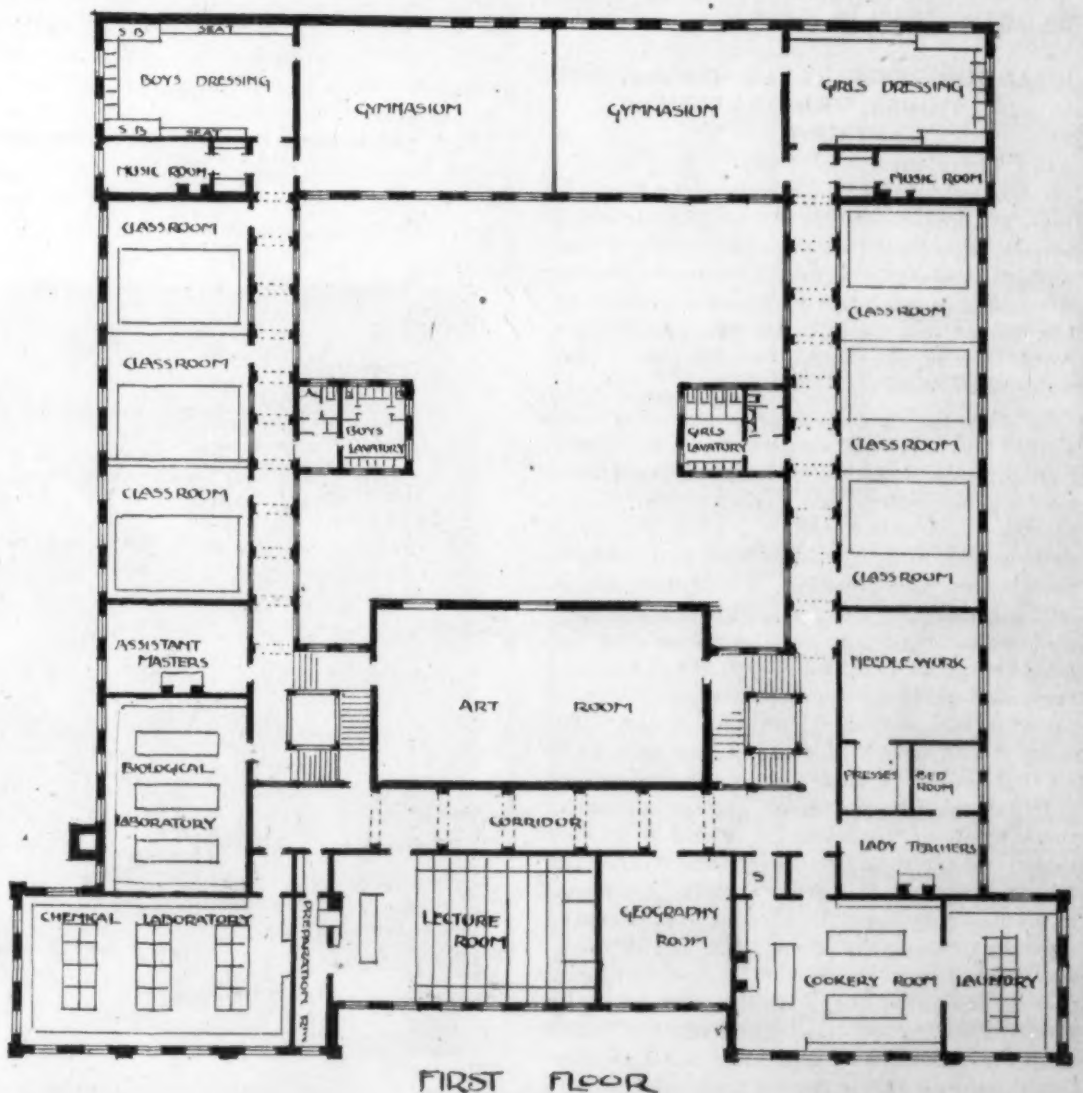
Each classroom has the lower part of the walls finished with tiles while the upper parts are in plaster and the floors are all made of wood blocks. The floor of the entrance hall is laid in marble tile and the other corridor floors and staircase are granolithic cement. The only wood finishing in the school are the door paneling of the assembly halls and the fittings.

A prominent feature in the building is the beautiful sculptured panel, measuring 9 feet by 6 feet, over the entrance door.

The measurements of the building are 183 feet 6 inches by 176 feet 6 inches and there are 36 classrooms in the block, plus a number of small rooms. There is also a splendidly equipped gymnasium for both boys and girls and an art room on the upper floor. An observatory is situated at the highest part of the building and there are flat roofs adjoining for weather observation purposes. The corridors are wide and the grained ceiling makes a very pleasing effect.

When the Motherwell School Board ventured on this scheme for supplying the community with this new secondary school they bought sufficient ground to build on to the same site a primary school, a technical school and a high school. The primary school is to be used as a feeder for the other two.

When the new Education Bill comes into





CORRIDOR, HIGH SCHOOL, MOTHERWELL, SCOTLAND.

force in Great Britain these two schools will be required very hurriedly so that then the community will have a group of buildings which will not only fill the industrial needs of the district but also prepare students for entrance into the University. The laboratories have been especially arranged for the work adapted for those who intend becoming medical students and the school is also arranged for a junior student center for the training of teachers.

The school is considered to be the finest in the district and the "British Architect" referred to it sometime ago as one of the best modern schools of recent years.

CHANGING STANDARDS OF SCHOOL-HOUSE VENTILATION.

(Concluded from Page 37)

water forced thru small holes in brass nozzles; the temperature can be regulated by means of radiators in the classrooms; and the air can be passed thru the schoolrooms in any way desired and led back again thru the fan room, heating room, and spray room again. In hot weather the temperature could be lowered by the use of extra fans in the rooms, and by passing cold water thru radiators.

In the Springfield Gymnasium, mentioned above, the re-circulation system of ventilation has been tried for some six or seven years. The air from the gymnasium is passed thru a spray of water and a radiator, and while the air of most gymnasiums is usually foul with odors of perspiration and other organic matters thrown off from the body, the air in this gymnasium is said to be singularly sweet smelling and free from taint. The effect on the coal bill has been very marked, being about half what it was before the installation of the new system. The comfort and health of the students seem to be all that could be wished in such an atmosphere.

In considering the great saving in coal in these times of high cost, it would seem that many more establishments, and especially schools where a great many children are forced to sit together, many in a room, would experimentally try out this plan. All that is necessary with a good ventilation system is to connect up the outlet duct with the inlet duct. By good ventilation system, I mean one that has a large fan and radiator and spray room to effectively govern the movement, humidity, and

temperature of the air. Certainly no theory raised in modern times since so many of us have become an indoor people better deserves careful test and experiment.

In Dr. Bass's experiment in an elementary school at Minneapolis, as related at the Fourth International Congress of School Hygiene, and in various periodicals, the air was brought into the room in direct contact with the children's bodies by bringing spouts up thru the floor with openings turned toward the children's faces, one for each child. The conditions here were controlled to a considerable extent, and psychological and other tests were made of the children before, after, and during the experiment. The tests, according to Professor Bass, seemed to show a greater improvement in the intellectual ability, and freedom from fatigue and dullness.

The experiments upon which we must chiefly rely at present for our knowledge of the relation of the atmosphere to our health, including

tuberculosis, are those made by the New York State Ventilation Commission at the College of the City of New York, and elsewhere. The conclusions of this Commission should be known by all school architects and those concerned with making schools healthful places for children. While more conservative than Hill's conclusion and those of Gulick, they are nevertheless in line with the above generalizations. It is probably possible to get all the advantages of open-air schools and at less cost in the ordinary school building. It is hoped that this article will encourage experimentation along this line in schools where outlet and inlet may be connected.

TEACHERS' SALARIES.

Camden, N. J. The board has granted a request of the teachers for higher pay and has asked the city board of estimates to increase the appropriation in order that a twenty per cent raise may be given.

The Wisconsin senate committee on education and public welfare has recommended for passage Senator Jennings' bill, providing for an increase in Milwaukee's school mill tax from three and one-tenth to four mills. An amendment to the bill gives to the grade teachers what they asked for and at the same time removes from the original bill one of the features to which the school board had objected.

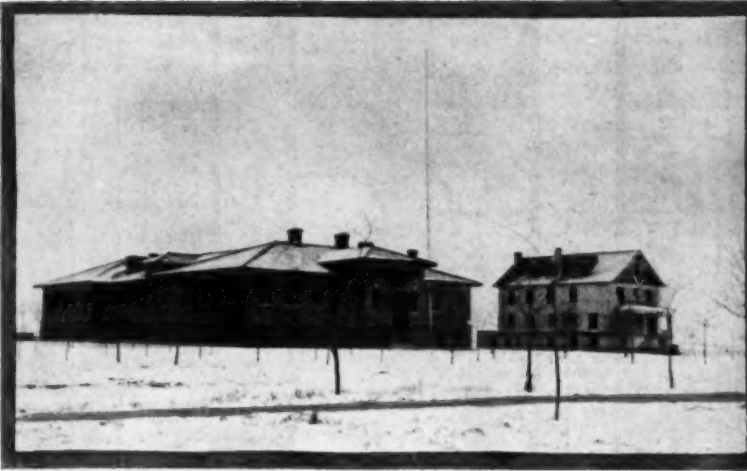
Dallas, Tex. The Schoolmasters' Club has drawn up a petition asking that the board pay teachers who are compelled to be absent from classes because of illness. The petition is based on the condition which faced a number of teachers during the recent influenza epidemic.

Dr. P. P. Claxton, United States Commissioner of Education, has recommended the adoption of a program providing for the doubling of teachers' salaries during the next five years and for further increases of fifty per cent during the following ten years. Dr. Claxton points out that it is only by large increases in teachers' salaries that the schools may be improved appreciably. He declares that teachers are now paid less than any other class of workers and the increases in the last few years have not been in keeping with the increases in pay of other workers, or with the increased cost of living.

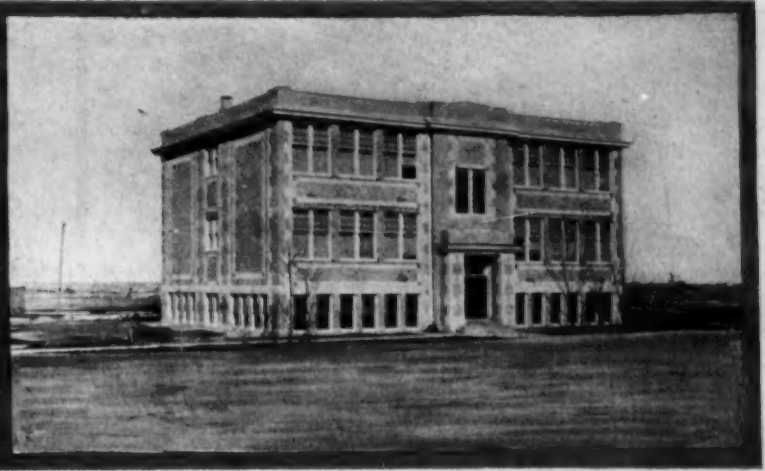
The city teachers' association of Newburyport, Mass., has started suit against the city to recover money deducted from the salaries of a dozen teachers because of absence during sickness. The auditor had made deductions in the teachers' salaries on the authority of the city attorney who advised that teachers can be paid only for the actual days they work. The teachers, on their part, have declared that the board had voted them a yearly salary and had granted them a leave of absence with pay.



GYMNASIUM, HIGH SCHOOL, MOTHERWELL, SCOTLAND.



Main Building, Phillips County High School, Holyoke, Colo.



Branch of Phillips County High School, Haxtum, Colo.

A CENTRALIZED COUNTY HIGH SCHOOL

A Unique High School in Phillips County, Colorado

Ralph Robb

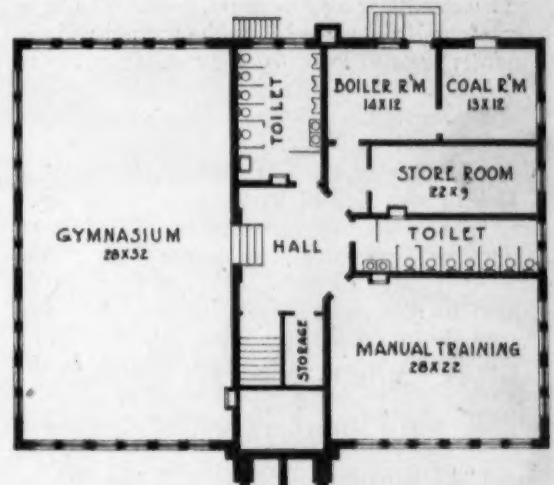
The development of the principle that the rural high school should serve an entire county rather than a very limited territory immediately in the neighborhood of the school building, has led to the development of a most interesting institution in Phillips County, Colorado. The school is in the best sense a community high school and its activities and scope are strictly dictated by the county which it serves.

The school is located in the village of Holyoke. It includes a main high school building and dormitory, and a branch high school in the village of Haxtum. The main school was built some years ago, and a large addition to it was erected during the winter of 1917 and the spring of 1918. In the fall of 1917 the county bonded itself to the extent of \$60,000. The pro-

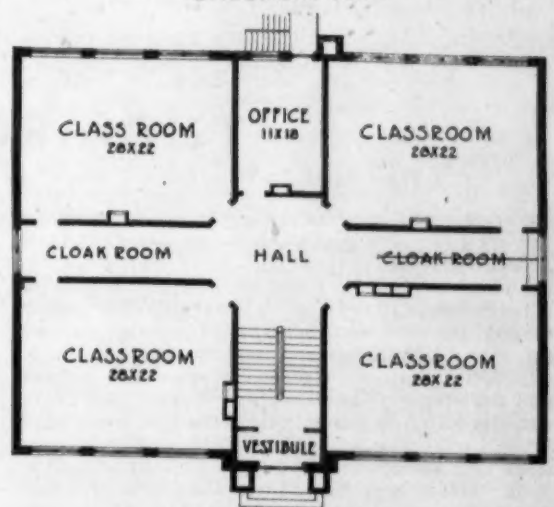
ceeds of the latter were used for the erection of the dormitory.

The original school building was of the one-story type and was erected at a time when future growth did not seem probable. The height of the building necessitated the continuation of the one-story plan and the architects deserve considerable credit for the manner in which they enlarged the structure.

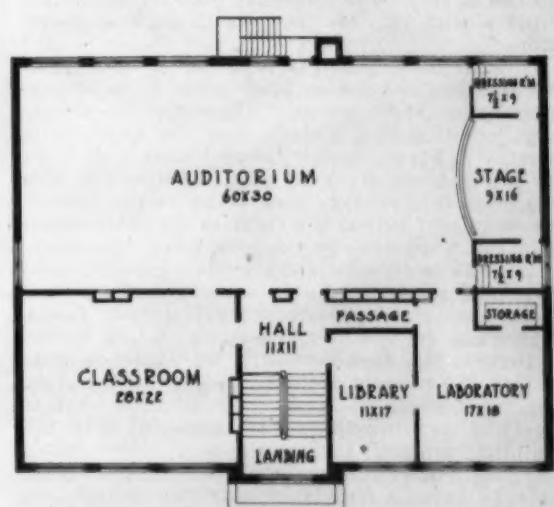
The completed building is in the shape of a letter "H," with the office, library, laboratory and toilets in the connecting section. One of the parallel structures contains the combination auditorium and study hall, and the gymnasium immediately underneath. Both these rooms measure 44 ft. by 80 ft., and have been found entirely practical in use. The other parallel



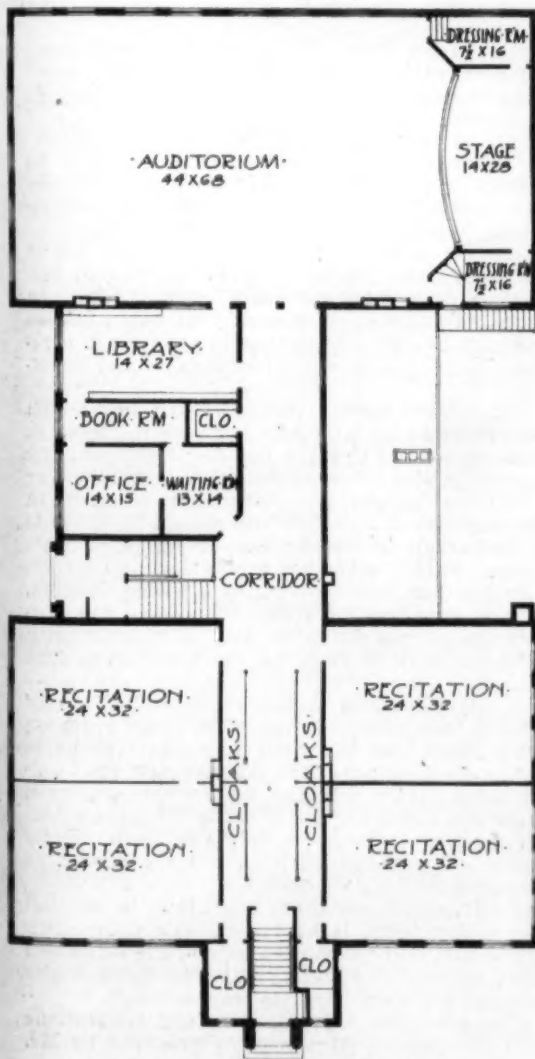
BASEMENT PLAN



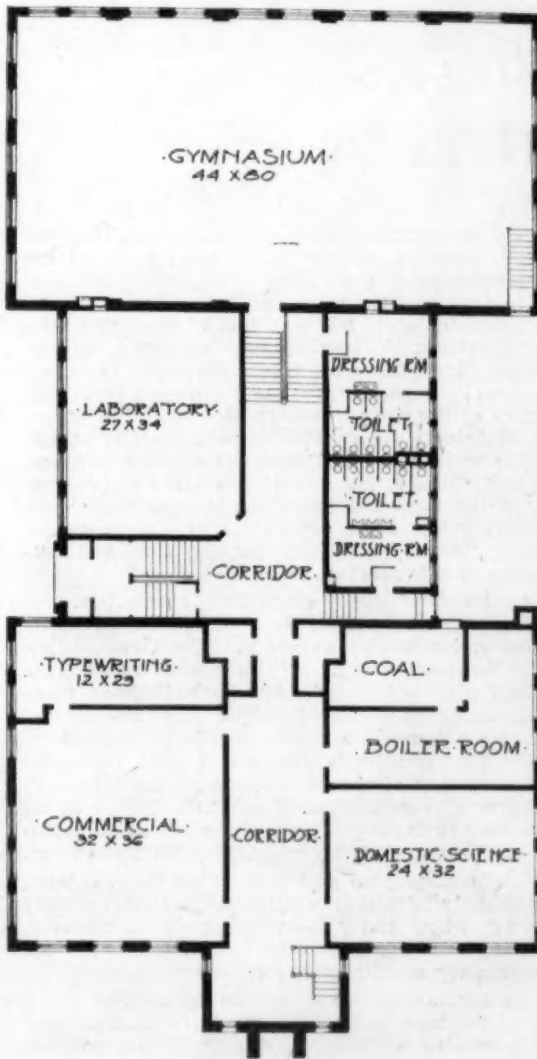
FIRST FLOOR PLAN



SECOND FLOOR PLAN



SECOND FLOOR PLAN



FIRST FLOOR PLAN

Floor Plans of Phillips County High School.

Floor Plans of Branch School.



EXTERIOR AND FLOOR PLANS OF DORMITORY FOR PHILLIPS COUNTY HIGH SCHOOL. THE ATTIC CONTAINS FIVE ADDITIONAL BEDROOMS.



part contains recitation rooms, a domestic science laboratory, commercial rooms and the heating plant.

Owing to the nature of the soil on which the building stands, it is possible to utilize the entire basement for classroom purposes. The basement floor is four feet below the ground and the windows are full length. The rooms are twelve feet high and have plenty of light and air for all purposes. The gymnasium is lowered considerably under the balance of the basement so that it is a clear height of eighteen feet.

The Branch School building is of the ordinary type with a basement and two floors above. It is very economically planned to meet the especial local situation. The auditorium is located on the second floor and the office and library are in immediate connection with it.

The dormitory which has been located on the campus with the main school building is quite interesting as a type of school structure and has been giving excellent service since its completion. The basement which is only two feet in the ground contains a dining room and kitchen and five rooms for boys.

On the first floor there are provided private apartments for the high school superintendent

and rooms for the several members of the high school faculty. The second floor is arranged for eighteen girls and the attic floor which is made serviceable by the use of dormer windows, contains rooms for ten girls.

The school buildings are both constructed of pressed brick and the dormitory has been erected of hollow tile and stucco. A glance at the plans will show that careful attention has been given to the problem of lighting. The school buildings are heated by means of steam and are fully ventilated. Steel fire escapes are provided on all three structures.

The school plant as it stands including the two school buildings, the dormitory, the manual training shop and the athletic field is worth \$120,000.

When the present superintendent came to the school as principal in the fall of 1916, there were four instructors engaged in a building costing \$18,000. During the three years the enrollment has trebled and the teaching staff has grown until it includes twelve members.

THE ARCHITECT

What Is He? Why Employ Him? How Select Him? How Deal With Him?

Persons who have never employed an architect are apt to be at a loss as to the proper method of procedure, while many who have had some experience may not be familiar with the intricacies of architectural practice. They may not understand that architecture is a *profession*, calling for men of the highest integrity, business capacity and artistic ability; to command the respect and confidence as advisers, and to sustain a grave responsibility to the public. No one may have given them practical information as to the relations that should subsist between client and architect. Experience has shown that lack of information on this subject is one of the most fruitful causes of trouble in building. The following is a brief outline of vital elements in building operations:

1. The owner, who is to spend the money, as he does not and cannot know what he is buying, must trust the architect. Therefore he should first of all assure himself that the architect is worthy of his confidence; second, that he is fitted by study of economy in plan, construction, and material to discharge this grave responsibility; in short that he has the right to the professional title.

2. The owner's interests are to secure the most available service, suitable design, best construction, most economical expenditure of funds. These can only be obtained by employing, not as a luxury, but as a necessity, an expert, a competent and reliable architect. The owner will be most benefited by choosing an architect before deciding upon anything else connected with the building project (if possible even before fixing the building site and limit of expenditure); thereby gaining from start to finish the services of the expert's technical experience and knowledge in every phase of the problem.

3. Designing a building is a process of evolution. Nothing but the full working out of the problem can produce this. The architect's goal is to lead the client to the best solution of the problem in hand. He is a sort of clearing-house, in adjusting the multiplicity of ideas, wishes, needs, financial and other details. The best eventual scheme may be quite different from that which at the start was suggested by either owner or architect. The owner should get the benefit of his architect's best ideas and various solutions of the problem, not simply what is presented to catch the attention, and "get the job"; the complete services of an expert, not of a mere draftsman. "Blue prints" are not the sum and substance of this service.

4. Do not expect gratuitous competitive designs, any more than free diagnoses, prescriptions or briefs. Plans are not like merchandise, kept in stock, to fit all individual needs; the model plan exists only for its individual place and condition; each building requires special time, study and labor—the architect's capital.

5. The architect's practice is upon the same basis as that of the physician and the attorney; each is a *profession*, and selection should be on exactly the same principle, upon record for character, integrity, ability and fitness for the service.

6. To employ an architect on the basis of what he charges is usually wrong. It is almost always wrong when the "cheapest" man is selected. "Penny wise and pound foolish" applies most appropriately to this uneconomical method.

An incompetent man selling his service for a small fee may and often does waste a great deal of money in inefficient planning, unsafe and unscientific design, unwise specification of materials, and unimproved opportunity generally. An

incompetent man as supervising architect is worse than useless as he has no accurate standards of his own but is at the mercy of the builder. A competent man by his services saves the client several times the amount of the architect's fee and often earns the undying gratitude of his client.

7. Architects, like doctors and lawyers, place different values upon their services, and their services likewise vary in merit and results. This should not confuse the owner—the best is likely to be the higher priced.

8. In merchandising one may buy calico or silk and pay accordingly, but there is only one kind of professional service that is worth paying for: that is the best of which the architect (or lawyer or doctor) is capable of giving. This means, generally, adherence to established standards of practice, and adequate fees. To underpay any man is to tempt him to be dishonest.

9. Make up your mind what you must have, then take the architect into your confidence as to the amount you are willing or able to expend; be perfectly frank with him. Do not try to set a price and refuse to relinquish terms and conditions which are bound to make your building cost more than you are willing to spend. Do not hurry. Take time enough on the preliminary sketches, so that you and the architect understand each other before the working drawings are started.

10. Do business only with a capable and honest contractor. Incompetence is as much to be avoided as dishonesty. "You cannot get blood out of a turnip," nor should you expect to get an honest building if the price asked is too low. Watch the work as much as you see fit, but if you have employed an architect whom you can trust, rely upon him and save yourself time and worry. You can earn more at your own business than you can save by trying to shoulder the responsibility that properly belongs to the architect.

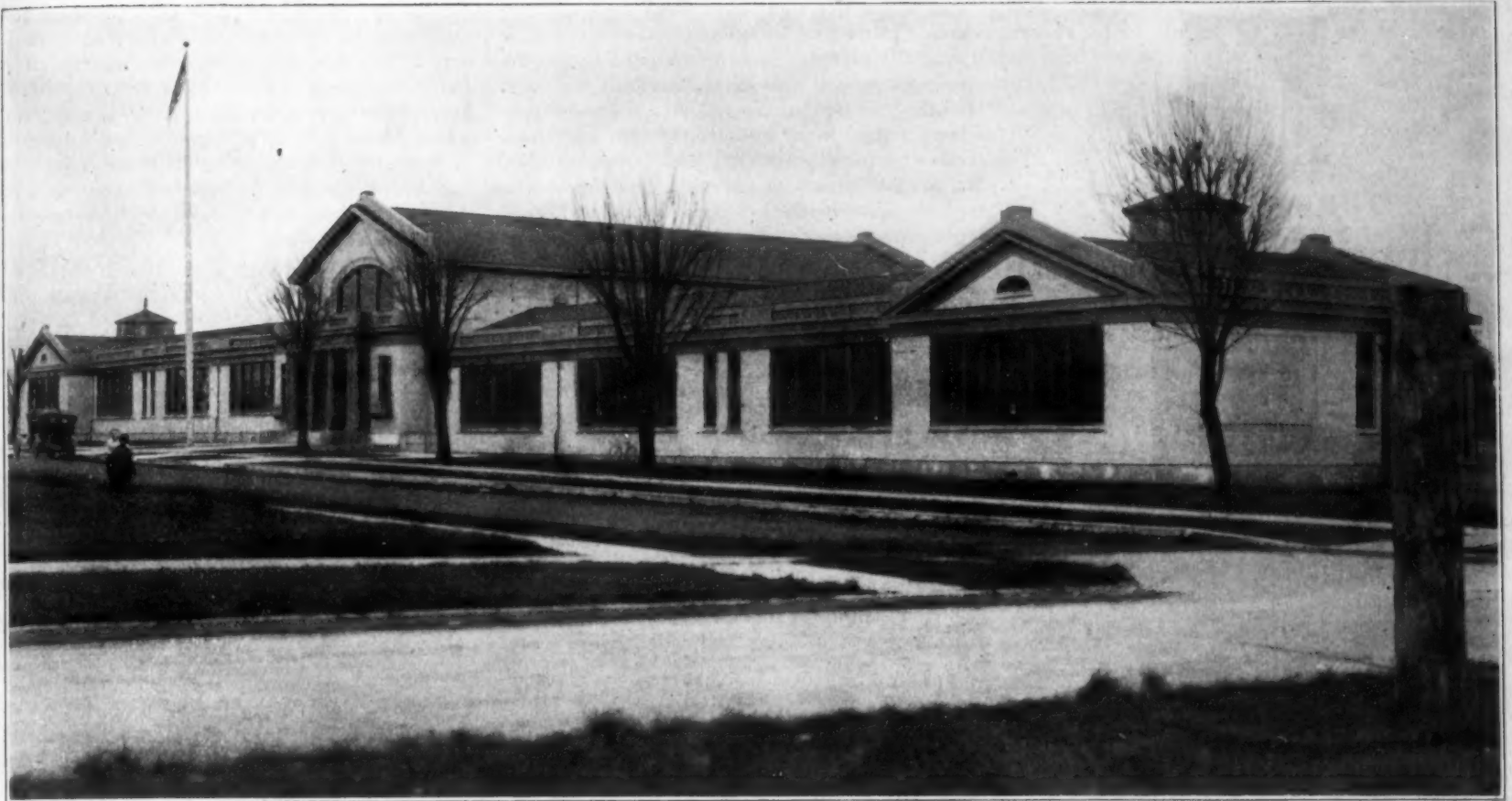
11. Do not violate the unwritten law which requires one head on a job. Let your instructions to the contractor be given thru the architect. The contractor who comes to you with suggestions or to call your attention to real or fancied errors in the drawings or specifications should be referred to the architect. Make use of the architect's advice. That is what you are paying him for.

Do not mar your building by a wrong location, etc., or with incongruous decorations and furnishings. If you desire an effect of organic unity when the work is done, use the architect to that end.

12. Architectural service is the only form of reliable insurance that the client may purchase which gives him the right to claim that he is getting what he pays for. An architect puts selling value into a building not only because the owner can claim for the building what the architect certifies it really is, but also from the intrinsic value resulting from a good design as compared with a poor one.

13. If you follow these few hints, in all that they imply, there is no reason why your structure should cost you a cent beyond the estimated price, or why it should cause you more worry than any ordinary business transaction.

(The preceding valuable facts and suggestions are reproduced from a circular prepared by Mr. Eugene T. Taylor and distributed by the Iowa Chapter of the American Institute of Architects.)



NEW EDISON SCHOOL, CENTRALIA, WASH. Watson Vernon, Architect, Aberdeen, Wash.

A ONE-STORY PANICPROOF SCHOOL-HOUSE.

The New Edison School at Centralia, Wash., which has just been completed is a radical departure from the ordinary type of two and three-story schoolhouses. This building is one-story in height, brick construction, panicproof in arrangement and embodies the latest ideas for the health of the pupils, the efficiency of the teachers and the wider use of the community.

The building is 350 feet long and consists of eight standard classrooms, an auditorium, toilet and cloakrooms. Provision has been made for additional units so that in time the building will extend around the square in the shape of a quadrangle with a plaza inside. In the center there is a two-story portion but this rise has been given to provide for an auditorium, seating about 350, which is reached by a most attractive entrance. The auditorium is equipped for social center use and has a booth for a stereopticon and motion picture machine. The floor may be cleared readily for indoor gymnastics, marching or folk dancing.

The sanitary equipment of the building is of the most modern type. The toilets are on the

main floor where they are readily accessible to the children and under the close supervision of the principal and teachers.

The heating and ventilation system has been given unlimited study, and is one especially developed to meet the conditions of a one-story building.

The boiler room is located directly under the main entrance and is deep enough to permit low pressure gravity steam circulation. The air is drawn down from the attic by electric fans and forced thru the vento radiation and passes directly into the classrooms.

The air is not heated until it reaches the classrooms and each room has its own heater and fan placed so that no heated air is conveyed horizontally. The heaters are arranged so that when the rooms are not occupied the air can be recirculated and heated over and over.

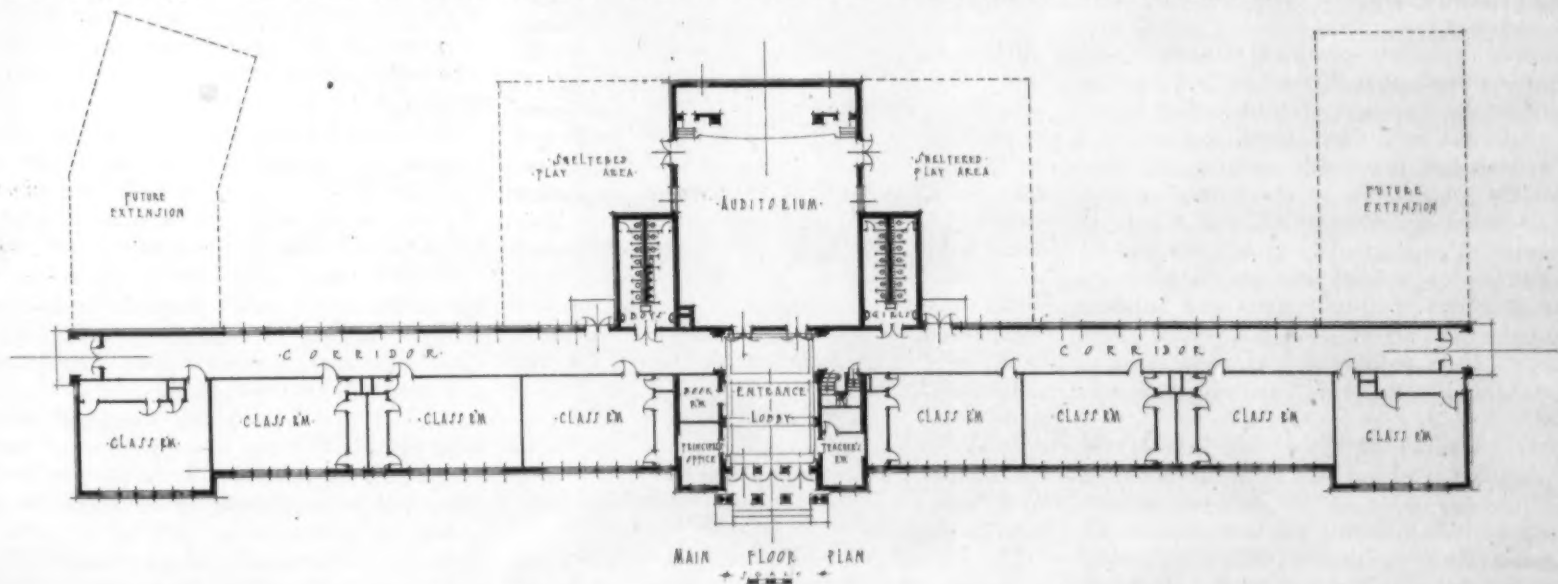
The temperature of the air in each room is controlled by a thermostat, which turns steam on or off of the radiation and maintains a temperature of from 68 to 70 degrees. The air is forced under pressure into each room, near the ceiling. The cooling effect of the walls and windows cause a downward flow of the air, so

that when the cooled air is removed at the floor a constant air change is caused, removing the breathed air with the cool air.

The air leaves the classroom at the floor, into the wardrobes and is carried out above the roof to the open. Thus a movement of air, at almost 70 degrees, is kept passing thru the cloak-room, tending to dry the clothing and remove odors. No clothing smell can reach the classrooms because the air draft is always the other way.

Rotation of air is made possible by means of shut-off dampers which are operated by compressed air and are under the control of the janitor. The dampers close the exhaust flues and direct the flow of air to the heating chambers and thru them back into the classrooms.

The heaters raise the temperature of the air to 70 degrees only and thus obviate the need of artificial humidification which must be provided in systems of the central type where air is raised to high initial temperature. The small unit fans move the air at a velocity of 300 feet per minute at the intake. They avoid the dust raising speed of the larger fans which also make air washing necessary.



EDISON GRAMMAR SCHOOL, CENTRALIA, WASH. Mr. Watson Vernon, Architect, Aberdeen, Wash.



THE AMERICAN School Board Journal

DEVOTED TO
LEGISLATIVE AND EXECUTIVE SCHOOL OFFICIALS
WILLIAM C. BRUCE, Editor

RECENT PROGRESS IN SCHOOL ARCHITECTURE.

Architectural styles and distinct types of buildings for any given purpose are the result of slow growth. Startling inventions in building are more rare than they are in mechanics; in fact, practically all improvements, other than the purely structural, are evolutionary in character. This is particularly true of school buildings, as a comparison of any recent book on school architecture with an old standard work like Barnard's, issued in 1843, will readily demonstrate.

Any discussion of the progress made during a single year must necessarily point to tendencies and movements rather than undertakings and improvements as originated and completed within that period. Even a decade is a very brief space in time, architecturally considered, for the styles and fashions change more rapidly in this twentieth century than they did in, say, the sixteenth century, it requires a generation or more to witness a real change and to judge its merit.

The junior high school is today the center of the greatest educational change and while there are many signs of well defined purposes and methods, much is still to be accomplished and principles as well as policies must be greatly clarified before the architectural problems can be approached with certainty. For the present, each new junior high school building presents an individual project to be undertaken in the light of local standards and ideas. However, opinion among architects and school authorities is becoming more commonly united to the effect that the academic rooms of the junior high school should be identical with ordinary classrooms of the grade schools, while laboratories and shops are simplified reproductions of similar rooms in the senior high schools. In both academic as well as special rooms, flexibility seems to be the important consideration lest rapidly changing practice make the new structures useless.

The war has given vocational education such a severe setback that little has been accomplished in the direction of trade school buildings. Like the work itself, much has been said and written but practically nothing has been done. The suggestions of the federal authorities are hazy and impractical, and wholly in the nature of propaganda. It will remain for local authorities to work out specific solutions of the problems of shop layouts and building plans, unless the attention of the federal board is very suddenly redirected from rehabilitation work to the general work for which it was created.

In the planning of elementary schools the most prevalent tendency still is in the direction of facilities for wider use by the adult population and by the children. The one-story school is demonstrating in this direction its utility and its economy, and the opinions which we expressed several years ago in these columns

concerning this type have been radically revised in its favor. In the east and in the middle west, fully as much as on the Pacific Coast, the one-story school has shown flexibility in use. Of the particular movements in one-story schools, that now under way in Cleveland shows the most originality and foresight. Mr. W. R. McCornack is planning and erecting a type of school with enclosed play courts which promises a new era in schoolhouse planning.

The unit of the schoolhouse is likely to undergo a change within the next decade if the educational methods of supervised study become a fixed fact in the United States. Dr. C. H. Judd of the University of Chicago, pointed out this probability in an address before the Department of School Administration recently. In his opinion the unit of instruction in the school of the future will be the study group. At present it is the recitation group and the unit of the schoolhouse is the recitation room. The latter requires only fixed seats, a blackboard and a few simple accessories such as we find in any elementary or high school of today. The study group of the future will be smaller than the class of today and will require more tools and working material in the shape of textbooks, reference works, apparatus, etc. A hint of the probable change is contained in the growth of classroom libraries, school museums, etc.

Standardization of schoolhouse planning, as a means to improvement in schoolhouse architecture, has been practically applied during the past year in New York City and the results obtained there have shown the value of the general movement. Mr. C. B. J. Snyder and his associates in the Bureau of Buildings of the New York Board of Education, have made public their standards for new construction work and have demonstrated the possibility and practicability of minimum standards. It would serve the general cause of better schoolhouses if the Committee on Standardization would extract from the hundreds of plans which it has had in hand, the best typical floor plans of rooms found commonly in schools and would make these available in a popular manual or report. Such a compilation would make available some general principles which only a few architects now have at their command.

SCHOOLHOUSE CONSTRUCTION AND FINANCING.

Architects will long remember the year 1918 because of the inactivity in building. Certainly no year since the Civil War showed such a small volume in schoolhouse construction in proportion to the needs for schoolroom space.

The inactivity of the past year was the culmination of four years of diminishing school work due to a variety of immediate causes, all bound up in the large general cause of the war. The results are an enormous shortage of school space which is becoming daily more acute as the country is returning to a peace basis and as the hysterical activities in the war industries and the general social upheavals are fading away. The shortage of class sittings is especially bad in the cities where normal increases in school population are re-asserting themselves thru the return of children from war occupations. Curiously enough, it is occurring in the very centers where the orders of the war industries board and of the capital issues committee were most stringently enforced against schoolhouse construction. Cities like New York, Philadelphia, Boston, Chicago, Buffalo and Detroit have great numbers of children on part-time instruction.

The United States Bureau of Education has estimated that fully \$500,000,000 worth of schoolhouse construction must be undertaken

during the years 1919 and 1920 in order that there may be sufficient schoolhouses by September, 1920. The United States Department of Labor estimates that between \$80,000,000 and \$100,000,000 worth of schoolhouse construction was deferred during 1918 and that considerable in excess of that amount will be necessary during the present year in order to catch up with the shortages which have been gradually accumulating since 1914.

The evidences of large activities in the school building field during the coming summer and, in fact, continuing until the end of the year 1920, are evident in all states. Everywhere thruout the country there is interest in the voting of bonds, in the levying of taxes and in the appropriating of public funds for schoolhouse work. The city of Buffalo, alone, is working on an \$8,000,000 project which is to be immediately undertaken. Detroit has several million dollars in its current budget and practically every large city from New York to Seattle, and from Duluth to New Orleans, has a building program.

The situation is improved by the fact that school bonds afford a splendid means of investment now that the period of war financing is practically over and that business has taken a general swing back to normal. Despite the huge income taxes there are great sums of uninvested capital which will be ready for the purchase of school bonds during the coming year and this form of indebtedness will be especially attractive, because it is tax free and affords a return nearly equivalent to that of high grade industrial and rail bonds. The element of safety to the investors could not be improved in any form of long-time investment.

A second factor in the situation is the general understanding which is growing more prevalent that prices for building construction will not be reduced very greatly for a considerable period of time, but that materials and labor will continue at a relatively high figure for several years.

The proposed reductions in the price of steel and lumber which the government is about to fix will probably hold for a considerable time. They are to go into effect immediately to the benefit of building operations during the summer. The actual reductions are not so great that the difference to the ultimate consumer is worth wasting time upon.

DR. SCHAEFFER'S DEATH.

The death of Dr. Nathan C. Schaeffer of Pennsylvania removes one of the last of a group of progressive educators who have done much for the solid, lasting advancement of American schools. The names of Harris, Parker, Cook, Shepard, Sabin, recall these men who were in their prime 25 or 30 years ago and who were quite a contrast to the leaders of the present day.

Dr. Schaeffer not only outlived his contemporaries but he kept fully abreast of the times and of the current movements in education. He was to his death the real as well as the titular head of the Pennsylvania school system.

Dr. Schaeffer spent all of his professional life in his native state. Born in Berks County in 1849, he was educated for teaching at the Keystone State Normal School and Franklin and Marshall College. He taught in the latter institution as a very young man and then became principal of the Keystone Normal School. He had spent some time in the German universities and he was deeply grounded in the philosophy of education as well as the practical aspects of pedagogy and administration. To his vast theoretic knowledge he added personal experience and wide observation. He was a deeply

religious man and out of sympathy with the materialism which runs thru the educational practice.

In 1893 he was appointed to the state superintendency and for 26 years his strong leadership has guided the state department and controlled the educational policies of the commonwealth. During this time he was active, too, in promoting the welfare of the teaching profession and his participation in association affairs was noteworthy and effective. He was successively president of the State Teachers' Association, the National Council of Education and the National Education Association. He was a frequent contributor to teachers' papers and a constant lecturer.

Dr. Schaeffer's finest traits were his warm-heartedness and his kindness. To come in contact with him was to appreciate his earnest professional spirit, his frankness and his straightforward effort for education. His interest in younger men and women was genuine and without the slightest indirection. As an administrative leader, he was fearless and sure and good hard sense tempered his utterances as well as his acts. He was truly one of God's noblemen.

BLACKLISTING AND BLACKLISTING.

Dr. J. B. Edmonson, efficient inspector of high schools for the State University of Michigan, advocates the blacklisting of school districts which fail to pay a reasonable salary to teachers. There is much merit in the suggestion, especially if the fact of blacklisting can be brought to the attention of the people of the community so that it may know what its officers are doing. Nothing will bring reactionary school board members so quickly to time—or retire them—as an appreciation of the situation by the parents and taxpayers.

If blacklisting is to be resorted to it will only be fair to open a register of teachers who break their contracts. Such a register, if kept in the state superintendent's office and held available for any school officer who may care to consult it, would stop many present day evils.

It would be a strong deterrent against resignations shortly before Labor Day and it would establish in the minds of all teachers that it is a disgraceful breach of ethics to break a contract to teach.

WHO SHALL CONTROL?

In an aggravated form the old contest between state and city control of education has arisen in a number of cities. The point of debate is the right of the state to fix teachers' salaries by mandatory legislation, and the opponents are the teachers and the boards of education. The latter hold to the position that they as the representatives of the state, shall be free to determine salaries and that the state should not interfere in what is purely a local matter. They point to the need for additional moneys for every detail of school conduct and they declare their inability to meet the full demands of the teachers without facing bankruptcy or discontinuing many established activities. The municipalities as such back the contention of the boards both on the plea of home rule and on the basis of the necessity of using funds for other purposes more pressing than the salaries of the teaching force.

On the side of the teachers there is the weight of the argument that they deserve higher pay in view of the present living costs and of salaries paid in other callings of equal importance. They declare that teachers are leaving the profession very rapidly and there is little hope of recruiting from normal schools and colleges as the reduced attendance amply proves. The danger is very serious that education will be reduced very

materially in efficiency during the most trying period of reconstruction, unless the profession is put upon a high level of financial reward. The nation cannot afford to do otherwise even in this period of sacrifice.

But the teachers point to a more pertinent fact—one that cannot be denied unless we overthrow all accepted theory and established policy. The schools are state institutions because education is a state concern. School boards are state bodies of local jurisdiction and choice. The state has the right to control at least the minimum essentials of school management including finances. It consequently has the right to control salaries—at least to direct minimum standards that appear necessary to keep up the general efficiency of the schools.

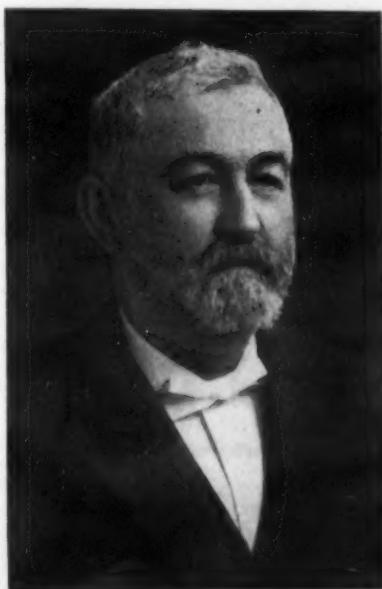
School boards have frequently recognized all the foregoing when they have sought to free themselves from aldermanic interferences. They will serve no good purpose to disapprove it nor to fight against state direction of salaries, except to satisfy their own desire for power. It is well to uphold a correct principle when it hurts as well as when it helps.

BUFFALO'S PROJECT.

Buffalo has appropriated eight millions to be spent immediately in schoolhouse construction. The local architects have formed a syndicate for handling the work most expeditiously and economically and Mr. William B. Ittner has been retained as consulting architect to map out the program and to draw up the basic requirements for the grade and intermediate schools. The development of the project will be interesting to follow.

MR. CHADSEY GOES TO CHICAGO.

Whatever criticism may have been due the Chicago board of education for not undertaking itself the choosing of a superintendent, it is certainly to be congratulated upon the election of Mr. Charles E. Chadsey of Detroit. For we could not name a stronger man than he among the city superintendents of the country or one better fitted for the peculiar difficulties of the Chicago situation. Unlike some other representative superintendents, Mr. Chadsey is equally able as a leader in education and as an administrator. He has the force, the courage and the tact to carry forward a broad, constructive school program and to compel the support of his colleagues, of the members of the board and of a city administration. On the other hand, he is very much of a teacher—both in theory and in practice. Mr. Chadsey deserves all the help which the school people of Chicago can give him to restore a measure of



DR. NATHAN C. SCHAEFFER
Died March 11, 1919.

quiet to the schools so that the orderly march of progress, which has been interrupted by sundry and continuous political shelling, may be resumed.

INFORMATION NEEDED.

A southern superintendent recently sent out broadcast to architects a notice, of which the following is the substance:

February 18th the school district will vote upon a \$215,000 bond issue for the purpose of erecting a grade school and an industrial high school. The industrial building will include forge work, automobile repairing, wood working, motors, machine shops, home nursing, commercial departments, printing and science. If you are interested in drawing and submitting specifications for this building, please communicate with me immediately after March 5th.

Very truly yours,
Superintendent of Schools.

This notice, which was sent out in good faith, was resented by all professionally-minded architects who received it and prejudiced them against the community and the well-intentioned man who wrote it. It was interpreted as a request for plans to be submitted without a reasonable assurance of the possibility of receiving the commission. It promised a free-for-all scramble that is the worst type of architectural competition.

One of the evils of architectural practice has been the custom of unprofessional men to submit sketches and plans of buildings without any probable certainty of employment. School authorities have been largely to blame for this because they have asked for sketches in season and out of season and have expected architects to make drawings as tho no expense were involved. It would be well if school authorities would remember that men who are ready to send out sketches at any or all times, with or without risk, are like quack doctors or ambulance-chasing lawyers. They furnish something for nothing and usually it is worth just what they charge for it.

Really professional architects are as careful and conservative in their methods of obtaining work as are lawyers and doctors and schoolmen. They will seek information concerning any building project which is open and they are ready to consider any proper invitation for a conference or a written application. They will engage in any competition which is surrounded with conditions that make for fairness and enable the best man to win. From the experience of years and from hundreds of contests for building plans they have developed a plan of competition which will insure an honest, unbiased and reasonably satisfactory choice of an architect. This plan is embodied in the Standard Competition of the American Institute of Architects and may be had by any school board.

If a competition of this kind is not engaged in, the method of direct choice is open to school boards. This will be welcomed by architects provided merit and ability are the deciding factors. The plan of the Palo Alto school board described on another page is a modification of the direct choice which may be used as a model. The main point is that school boards prevent personal pull, politics, or other similar unrelated motives from influencing their decision so that the best man and the best plans will be chosen. After all it is the best building for the children that is the result sought and architects have this in mind in defining their professional attitude.

How would school board records look if school board members were marked for tardiness and absence as are children?

Never bear more than one kind of trouble at a time. Some people bear three—all they have had, all they have now and all they expect to have.—Edward Everett Hale.

WHAT TYPE OF HIGH SCHOOL BUILDING IS THE BEST ALL-AROUND INVESTMENT

IV. The Supervised Study Room Type.

S. A. Challman, Commissioner of School Buildings for Minnesota

Of late years the supervised study plan has been gaining momentum, and with it has come the demand for a building suitable for efficient work under the conditions made necessary by this plan.

As study halls, either separate from recitation rooms or combined with them, are a hindrance rather than a help to a school organization of this character, the elimination of the study hall becomes the most significant feature of this type of building. The pupils are all cared for in recitation rooms and in the diagram illustrating this type of building for academic school work all the recitation rooms have been made of a size to accommodate 35 pupils each. This uniformity of size of rooms is not essential to the plan, but has been incorporated in this as well as other diagrams in order to facilitate comparison of floor areas of different types of buildings. This particular type as outlined in the diagram will require 42 square feet per pupil.

The opinions favoring this type of building have all been offered with the understanding that other features, such as auditorium, gymnasium, administration rooms, industrial and vocational rooms are to be provided in addition to the rooms for purely academic work. In the main, it has been thought desirable to obtain the opinions of high school principals on account of their being in close touch with the problem. The symposium which follows is compiled from an inquiry made into building types for four different forms of school organization, the inquiry being sent to about three hundred educators in responsible positions in the United States.

FAVORABLE OPINIONS.

John W. Greer, Asst. Superintendent City Schools, Minneapolis, Minn.

Type D with all rooms from 30 to 35 seating capacity is preferable to any other plan. All rooms may be used both for study and recitation. Our Central high school provides for 2500 students without any study rooms. Students' study groups of 25 to 30 pupils each are much more efficient for supervised study than any other. The library study and reference room next to the bookroom ought to seat at tables 125. Large study rooms not occupied to full capacity are a great loss in construction cost. Every school of this type must include an auditorium.

J. E. Addicott, Prin. Polytechnic High School, San Francisco, Calif.

As type D allows for supervised study in a practical way, I prefer it to all other types of high school buildings.

Alfred P. Fletcher, Asst. Superintendent City Schools, Rochester, N. Y.

Type D is, in my judgment, preferable to the other types. My chief reason for favoring this type is that in this city supervised study in a combined study and recitation room is proving very successful, and in our new buildings we are making no provision whatever for large study halls.

Edw. Rynearson, Prin. Fifth Ave. High School, Pittsburgh, Pa.

I prefer type D, provided however that the building contains a good-sized library properly equipped with reference books, etc., and also an auditorium with a seating capacity of from ten to twenty-five per cent in excess of the school enrollment. At one time I preferred type B or C, but when there is an assembly room the pupils study more and acquire better habits when broken up into smaller units and when more closely supervised. Effective supervision of a large study room is difficult. Very few teachers can do it and these are often the best teachers who should do more teaching. In the smaller room the teacher can get closer to the pupil and cooperative study may be profitably conducted. Your pupils will be more evenly distributed for

passage to and from recitations. In case of fire, the large study room might be very dangerous.

Ernest J. Becker, Prin. Eastern High School, Baltimore, Maryland.

My personal preference is for Type D. As supervised study is practically impossible in large study halls, I much prefer the use of classrooms for study purposes—with the classroom teacher ready and willing to give help. The program should be so arranged, however, that no recitation work is going on at the same time as the study. This is quite possible with the Type D building. In other words, for reasons of economy and administration I prefer a plan which provides a sufficient number of classrooms of about equal size, to be used for both study and recitation purposes, the two purposes, however, to be kept rigidly distinct. Of course this presupposes a large assembly hall somewhere in the plan.

M. E. Pearson, Superintendent City Schools, Kansas City, Kansas.

We have in our high school what is known as supervised classroom study. The classroom teacher has a long period divided into two parts. One part for the recitation, the other for supervised study. When the double period is over the pupils move on to another department and have a recitation and study period with the next teacher. There are five periods during the high school day. No study hall features are required by this plan. Each teacher directs the pupils in the subject under her care both as to the recitation and as to the study. No classroom need be larger than the normal capacity—thirty pupils. Type D building is our choice since it provides for no separate study room.

M. E. Ligon, Principal High School, Lexington, Kentucky.

Type D is my preference. It is adapted to the organization of the school on the basis of supervised study. At present our Senior High School is organized in a building of type D. Our day is divided into five periods of work and one lunch and rest. The work periods are seventy minutes in length of which forty are given to the recitation and thirty to study in the same room under the same teacher. Each student is required to take five subjects or four subjects and one drill. This arrangement eliminates study hall altogether. By this arrangement we have been able to do in four recitations per week the same amount of work, and we think a better quality, than we did under the old organization of forty-five minute periods and the study hall for work when the students were not in recitation and five recitations per week.

E. J. Wilson, Prin. High School, Fond du Lac, Wisconsin.

I believe that type D is the school building which should be recommended. It seems to me that supervised study should be introduced into the schools and that this type of building would serve the purpose better than any other.

A. C. Roberts, Superintendent City Schools, Everett, Washington.

From the standpoint of the recitation work of the school, the solid consideration of school subject matter in all its forms, I believe that type D is by all odds the best.

Many considerations must be kept in mind, however, and one of the important ones is this—

that with the type D building an adequate assembly hall must be provided. With our modern ideas of organization, community center, and school team work, an accessible assembly room capable of seating a considerably larger number of people than the student body, is just as necessary as classrooms and laboratories themselves.

My opinion as to the desirability of class D is based largely upon my conviction that supervised study in the classroom with the teachers themselves is the rational and progressive form of high school organization. From the standpoint of scholarship, closer association of teachers and pupils and finer and better adjustments of work in every department, I believe that type D is the best building yet suggested.

May I say that we have had supervised study with a long recitation-study period during the past four years and we have no desire to go back to the old form of high school organization which was built around a building of type A construction? We do not use our study hall for study purposes at all. I have made a somewhat comprehensive statement of our plan of supervised study which was printed in the "School Review" for December 1916. This article is based upon a school building of type D.

C. P. Briggs, Prin. High School, Rockford, Illinois.

I believe that type D for a small school is the best sort of an arrangement of a high school building. It certainly is the cheapest and most efficient. Most teachers are interested in the teaching side and this building offers the best facilities for efficient teaching.

Wm. Urban, Principal High School, Sheboygan, Wisconsin.

I prefer type D. The supervised study plan is the coming plan. This method centers responsibility upon the teacher and the pupil directly. It is the plan that can be carried out most advantageously with this type of building.

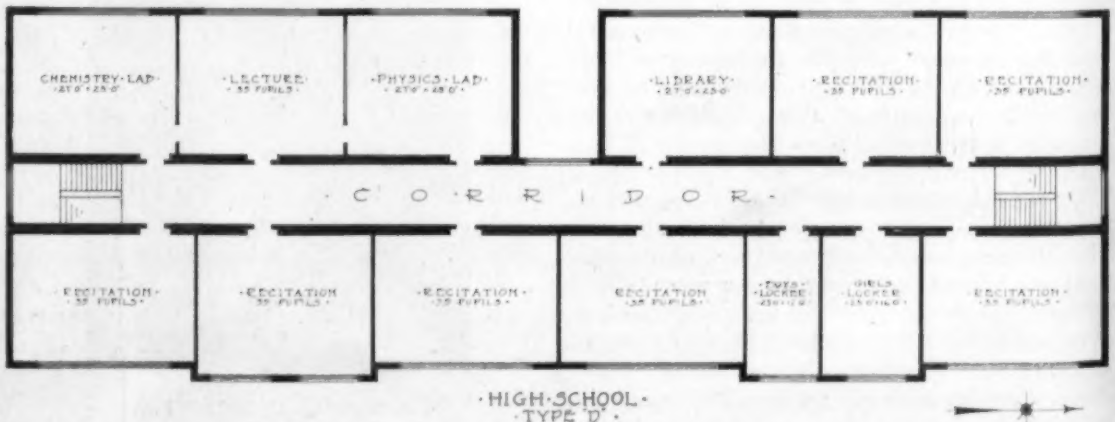
Chas. S. Meek, Superintendent City Schools, San Antonio, Texas.

If the proposition of gymnasium, auditorium, and shops for vocational work are eliminated, I should be inclined to favor type D. The small groups scattered thruout the building for study purposes make the problem of discipline much lighter, eliminates the necessity for study hall teachers, make conditions better for concentration on the part of the pupils while studying. A small group of study pupils in the rear of a schoolroom is no hindrance to the teacher conducting recitations. A recitation going on in front of the room is much less distracting to pupils studying than the confusion in a large study hall where many pupils are assembled.

W. S. Painter, Superintendent City Schools, Mount Vernon, Indiana.

Provided an auditorium is available, type D is superior to the other buildings. The size of rooms and shape are best adapted to both recitation and study purposes and admit of efficient methods in supervised study as well as keeping the units of a satisfactory size. This plan will probably call for more individual rooms and possibly an extra teacher or two for a small school and more in the large school. But there is actually less space to heat and care for with this method than with the large assembly and it makes for efficiency in the quality and quantity of work.

(Continued on Page 91)





Specimen chart in miniature from the new Victor set of 18 charts for teaching music in the schools.

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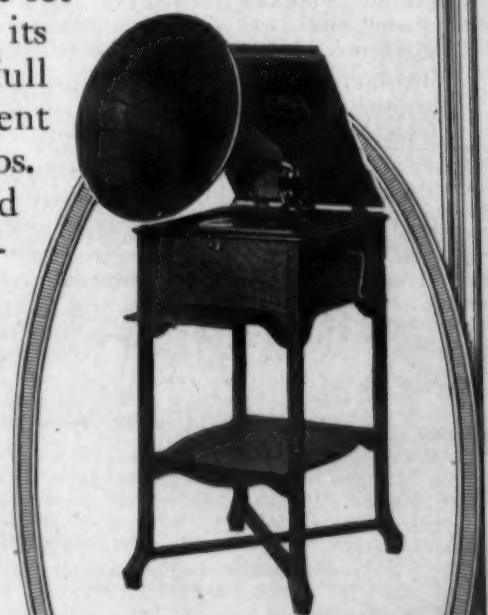
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Architects in U. S.—See "Sweet's Index, 1918," pages 1209-1305; in Canada—See "Specification Data, 1918," pages 120-21.

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Age-Grade Progress Table

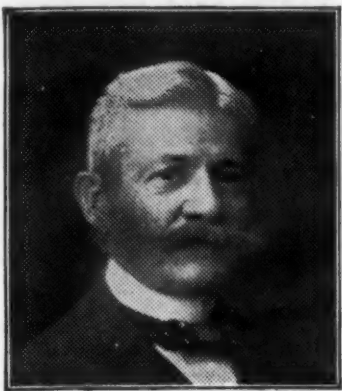
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SCHOOL BOARD NEWS

BUILD SCHOOLHOUSES.

"Build schoolhouses," says Dr. P. P. Claxton, United States Commissioner of Education.

"Previous to our entrance into the war we were spending in the United States a hundred million dollars a year on new schoolhouses, but at this rate we were in no wise supplying the need. Hundreds of thousands of children in the lower grades were on half-time attendance, and millions attend schools in houses wholly unsuited to school use, according to modern standards—badly ventilated, poorly lighted, and otherwise unsanitary.

"For the two years of our participation in the war schoolhouse building almost ceased, and there are now both the need of 1916 and the accumulated need of the two years of the war, larger than in normal times because of the unprecedented shifting of population.

"To supply these needs will require not less than five hundred million dollars of building, to be completed by the time of the opening of the schools in the fall of 1920. It is very important, therefore, that legislatures, county and city councils, and boards of education all over the United States immediately take the necessary steps for this building and for the raising of money necessary for it.

"If there be danger of an over-supply of labor during the period of demobilization and readjustment, and a consequent lack of employment for the men returning from the army and from the munition plants, such a schoolhouse building program will be no inconsiderable factor in the solution of this problem of employment.

"If such of the large amount of accumulated building materials of the War Department as are suitable for school buildings can be had for

this purpose it may reduce the cost for raw material considerably.

"In view of the part which popular education must play in the new era there can be little or no objection to any expenditures for building that may be necessary for the full efficiency of our school systems."

AMONG BOARDS OF EDUCATION.

Madison, Wis. A non-partisan school board ticket has been drawn up to be presented at the April election. The movement is being supported by the various clubs and federations of the city.

The mayor of Lewiston, Me., has exercised his privilege of office in naming a new grade school the Roosevelt School.

Davenport, Ia. Three intermediate high schools have been opened in the city.

The Chicago board of education has distributed among the pupils of the schools and their parents a practical pamphlet which sets forth the advantages of a high school education. The pamphlet gives a summary of the statistics on wages and shows that the high school graduate at the age of 25 earns \$31 a week while those who sought work before entering high school only earned \$12.75 a week. It points out that positions with a future are not open to boys and girls under 16 with no high school education, but that it is necessary to pursue special training for a definite line of work that will make for better positions and higher wages.

Everett, Mass. A million dollar budget has been adopted by the finance committee of the board for the ensuing school year. The amount to be raised by taxation is \$764,764.

The city council of Norfolk, Va., will shortly select an architect to supervise the \$300,000 school building program to be carried out by the city. Plans will be prepared immediately for the erection of two school buildings and additions to a number of other structures.

A study of the fuel problem at Crookston, Minn., for a number of years past shows that there has been considerable variance in the amount of coal used in buildings of the same capacity. The cost per one thousand cubic feet for the central and Lincoln buildings for the year 1917-18 was \$4.12, while in the Washington building it reached \$10.06.

A study of the per capita cost of education shows that the cost for the grades was \$42.35 and for the high schools \$79.03.

On February 21, the Central High School of East Grand Forks, Minn., was burned, resulting in a practically total loss. With the loss of only four school days, the high school opened in the local Commercial Club, and the following school day all the grades re-opened in other temporary quarters. Immediate steps are being taken to rebuild on a larger and more modern scale. It is expected to have a grade building ready for occupancy in September, and the new high school in time for the second semester of the next school year.

SCHOOL ADMINISTRATION NOTES.

The Americanization Committee of the mayor's advisory war board of Cleveland has protested to the board of education against the reduction in the Americanization program in the schools. The appropriation has been cut from \$100,000 to \$36,000 and the estimated amount for the present year's work is \$150,000. In support of its protest, the Committee pointed out that 75 per cent of the population is either of foreign birth or parentage and a large number can neither speak nor understand English.

A reorganization of the grades in the grammar schools and the Junior High School of Little Rock, Ark., has been made. The schools are divided according to the three-three-three plan and pupils who complete the sixth grade will hereafter enter the Junior High School immediately upon their graduation. The new arrangement makes it possible to complete the entire school course in twelve years.

Supt. C. C. Alexander of Hibbing, Minn., has recommended that the all-year school plan be inaugurated in the schools. Supt. Alexander gave the board several reasons for the support of his recommendation.

A plan for merging the Philadelphia Girls' High School and the William Penn High School under one management has been submitted by Mr. Bruce M. Watson, secretary of the Public Education Association and the Child Labor Association. Mr. Watson declares that the plan would produce absolute freedom of interchange

(Continued on Page 63)

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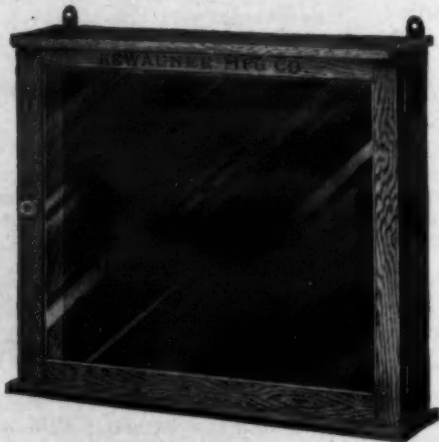
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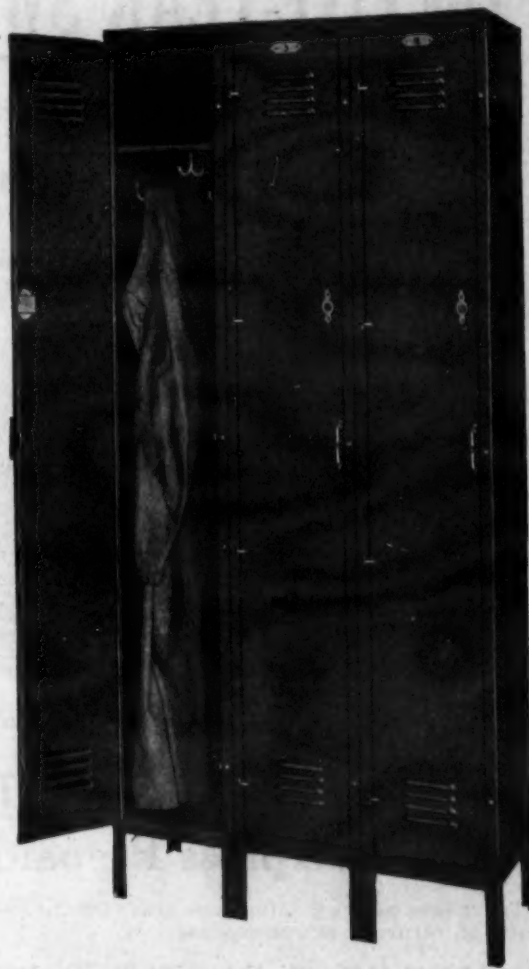
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(Continued from Page 61)

between pupils and teachers by groups, classes and individuals and would effect the greatest economy of space and administration. The plan offers a solution for the problem of transfers from the Penn to the Girls' High School recently authorized by the board and which was vigorously protested by the students and teachers.

Sioux City, Ia. Prin. H. A. Bone of the Sioux City High School has declared that reconstruction problems will affect the school systems of the country and predicts that colleges, as well as high schools and graded schools will ultimately adopt the all-year school plan. Mr. Bone points out that the school life would be shortened, the teachers would have continuous employment and the expense of conducting the schools would be considerably reduced.

Wapakoneta, O. The school day at the Blume high school has been lengthened 35 minutes. Sessions open at 8:10 in the morning and close at 3:15 in the afternoon. The senior class remains one-half hour after school each day to complete classwork.

Armour, S. D. As a speed up measure, the board has ordered that school sessions be held on Saturdays for a period of ten weeks and that the school year be extended to June 20.

The schools of Belvidere, Ill., under the direction of Supt. J. W. Browning, have inaugurated two new activities. The first is the establishment of a Reserve Officers' Training Corps for the high school and the second is the opening of a health crusade in connection with the National movement for better health among school children. Both these movements are the result of war-time conditions.

The high school at Diller, Neb., on March 4th was highly praised by the high school inspector for the splendid teaching corps and the character of the work accomplished. The school board and the community were congratulated for the excellent spirit manifested in and thru the school. Mr. D. S. Domer is superintendent of schools at Diller.

At a recent election held at Mason City, Ia., a decisive majority showed the preference of the voters of the city for the continuance of the office of superintendent of schools as conducted

during the past year in full charge of all schools. Previous to last spring the grade schools and high school had been under separate managements, with a superintendent in charge of each department. The election revealed that two supporters of the new system were re-elected to the board and the one new man was also in favor of undivided responsibility for the entire school system.

The quarantine regulations slightly disorganized the schools of Mason City, Ia., during the past winter, making it necessary to shorten two of the four quarters and to reduce by one-half the regular summer session.

Spokane, Wash. The board has adopted a rule prohibiting dances under school auspices outside of school premises.

Minneapolis, Minn. The board has asked the city officials for special policemen to safeguard the school children who cross dangerous street corners.

AMONG SUPERINTENDENTS.

Commissioner Calvin N. Kendall of New Jersey, in a recent communication to clerks, secretaries and members of boards of education in his state, directs special attention to five things which are worth considering in connection with the preparation of budgets and the distribution of funds.

Mr. Kendall comments especially on teachers' salaries, consolidation, supplies, repair of school buildings, furniture, and sanitary systems. He points to the fact that there is a scarcity of teachers to an alarming degree, due to the reduction in enrollments in normal schools and to the employment of teachers in other lines of work. He urges that boards make every effort to convince taxpayers that, if the schools are to be well taught, they must see that adequate salaries are paid to secure the right kind of teachers.

A second point is that dealing with the consolidation of schools in rural and village school districts. He points out that some districts would be able to continue with fewer teachers if consolidation were introduced.

The improvement of sanitary systems is highly important not only for the sake of the children's health but for the maintenance of school standards thruout the state.

There is a greater demand than before for improvements to school buildings due to delays on account of war conditions. Now that the war is over repairs should be undertaken immediately with special attention given to the seating and other hygienic features of schoolroom equipment.

A unique system of community betterment has been undertaken at Tama, Ia., under the leadership of Supt. Finley. The Civic Club, Commercial Club, and the local churches have united on club work projects and have contributed for their support. Supt. Finley is responsible for the working out of the plan and is assisted by Mr. W. D. Cocking who has charge of the club work. Mr. Cocking devotes two periods each day to manual training, some time is given to athletics and the remainder to organization and supervision of community betterment projects.

Under the direction of Supt. Willson Hawkins of Canton, O., a number of improvements have been made in the schools. Among these are the introduction of a teacher-training course; the adoption of rules governing the eligibility of teachers and a schedule of salaries; the replacement of the classroom organization of the individual teacher by the group system so that pupils have half the day for study; the introduction of ten thousand new books for elementary grades, requiring specific rather than incidental instruction in subject matter; the reorganization of the dental department with a dentist giving full time to the school work; revision of the sewing teachers' schedules in such a way as to distribute the work by buildings rather than by grades, saving much time in traveling between buildings; the issuance of bonds for a modern elementary school, the completion of the high school, and the Worley and Burns grade schools. The school day in grades above the fourth has been lengthened thirty minutes and a new system of pupils' record cards has been installed to give parents knowledge of child's progress.

The superintendent has made approximately six hundred visits into the schoolrooms to observe the work of the teachers and pupils, has held one general teachers' meeting, ten principals' meetings and eight grade and high-school faculty conferences.

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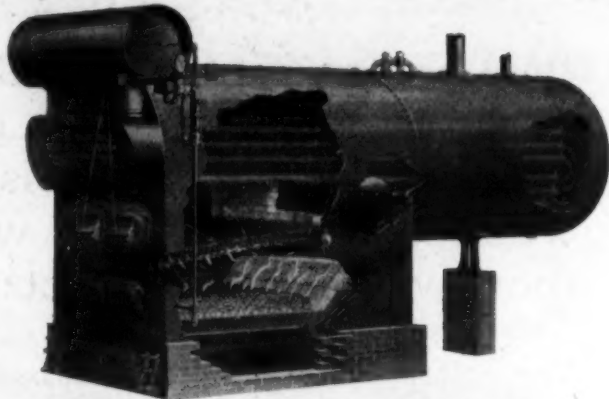
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PERSONAL NEWS OF SUPERINTENDENTS.

Cyrus S. Grove, superintendent of the schools of Stephenson County, Ill., has announced his resignation, effective July 31st, next.

Mr. A. R. Baldwin, who recently returned to school work, has taken up his duties as superintendent of schools at Bunkerhill, Kans.

Mr. W. A. Anderson, of Elberton, Ga., has been appointed superintendent of schools at Asheville, N. C.

Dr. Edward T. Pierce, a well known educator, died at his home in Sierra Madre, Cal., on January 30th, after a long illness. Dr. Pierce was 68 years old. He was president of the Chico Normal School from 1889 to 1893 and he held the presidency of the Los Angeles Normal School from 1893 to 1904.

Supt. F. J. Sperry of Mankato, Minn., has announced his resignation, effective with the close of the present school year.

Mr. C. L. Love has been re-elected for a period of three years as Superintendent of Schools, at Mandan, North Dakota. The Board of Education has granted a considerable increase in salary.

Dr. George E. James, of the College of Education of the University of Minnesota, has gone to France to undertake special educational work for the army with the Y. M. C. A.

Supt. H. C. Snyder of Stevens Point, Wis., has been re-elected, with a salary of \$3,000.

Supt. J. E. Wignot of Dover, N. H., has been re-elected with a salary of \$2,500 a year.

Supt. D. A. Grout of Portland, Ore., has been re-elected for a three-year term.

Chas. E. Skinner of Athens, O., has been appointed district superintendent of Supervision, Dist. No. 3 of Columbiana County. Mr. Skinner will make his headquarters at Columbiana.

Supt. P. R. Spencer of Hastings, Minn., has been re-elected with a salary of \$1,800 a year.

Mr. Charles A. Aitkin has been appointed acting secretary of the board of education at New Orleans, La., during the absence of Supt. J. M. Gwinn in France.

Supt. G. H. Sanberg of Crookston, Minn., has been re-elected for the next year with a salary of \$3,000.

Supt. J. J. Rae of Burley, Ida., has gone to France to enter the Overseas Educational Work of the Y. M. C. A. Mr. H. M. Broadbent is acting superintendent in his absence.

Supt. Ralph Yakel, of Paducah, Ky., has been re-elected for a four-year term, with salaries of \$3,000, \$3,200, \$3,400, \$3,600 respectively.

Charles E. Chadsey, of Detroit, Mich., has been elected superintendent of schools at Chicago, Ill., with a salary of \$18,000.

Walter D. Cocking, formerly at Ackley, Ia., has been elected superintendent of schools at Storm Lake for the next school year. Mr. Cocking received his honorable discharge from Camp Taylor in January.

Mr. Cocking has just been engaged for the remainder of the present year as director of community club work at Tama, Ia. The local churches and clubs have united on a definite community betterment system under the supervision of Supt. Finley.

Mariboro, Mass. The salary of Supt. E. P. Carr has been raised to \$2,400.

Supt. L. W. Mayberry of Wichita, Kans., has been re-elected for a two-year term.

TEACHERS' SALARIES.

Beloit, Wis. The school board has granted increases of \$10 per month to teachers.

Batavia, N. Y. The board has fixed the minimum salary of teachers at \$650 and the maximum at \$900.

Increases in the maximum pay of Minneapolis grade teachers of \$200 a year and of high school teachers \$300 a year have been approved by the Hennepin county senators who have introduced a bill in the legislature increasing the city's levy for school purposes to 14.15 mills. The increases provide approximately \$535,000 a year.

Minneapolis, Minn. The city treasurer has called the attention of the school board to the excessive use of time checks by teachers, clerks and other employees of the board for payments of salary in advance of the regular pay day. Employees have been requested to limit the use of time checks to absolute necessity as an abuse of the privilege will mean actual cancellation.

Council Bluffs, Ia. The teachers have entered a vigorous protest against the merit system of

pay, in a paper prepared by the executive committee of the organization of non-merit system teachers. The paper is a challenge to the defenders of the system and points out that the experiment has failed and should be eliminated. The arguments as advanced against the merit system are as follows:

"If the objections to the merit system are not valid will its defenders answer them?"

"Will they explain to the taxpayers just what the taxpayers got in exchange for the \$4,000 paid out for the merit system during the past half year?"

"Will they explain why all of the fifty-four teachers were found competent enough to receive a bonus, and how the poor teachers are to be eliminated under the present system of judging?"

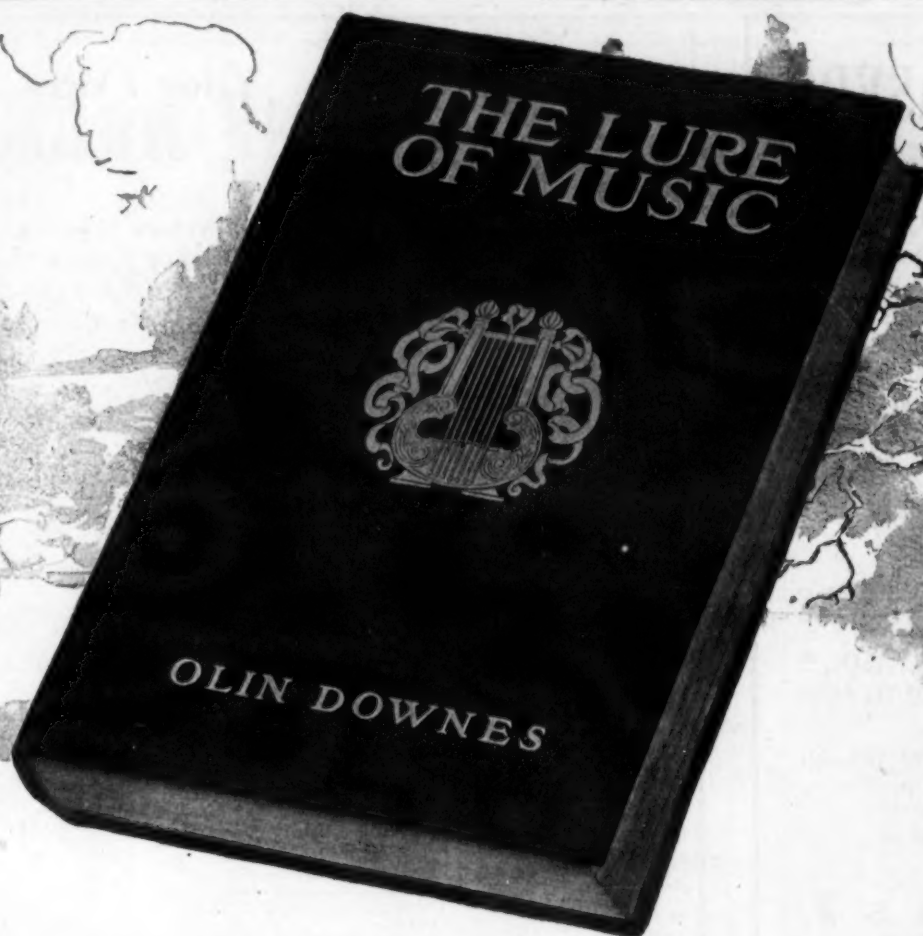
"We paid good money to try the thing out. Even its strongest supporters admitted it to be an experiment. Now, under its endless system of testing, rating and judging, its preparing of exhaustive and exhausting reports for the superintendent, there has been little time for real teaching. It has destroyed the friendly, human relationship that ought to exist between teacher and pupil. It has made each pupil a 'specimen' to be the constant subject of purely academic experiments having no practical value, except to furnish tabulated data for voluminous reports—and for what? It has changed many a kindly, patient teacher into a driver who must secure results at any cost."

"It has wrecked and is wrecking the nerves of a majority of the women of the teaching force who are expected to exhibit the same strength as a strong, energetic man, who works under his own direction, while they suffer the continual strain of being checked up."

"It promotes and rewards dishonesty in that the teacher who is willing to give a little assistance here and there to a pupil in a test, makes a good showing and gets a good bonus; while the conscientious teacher plods on unrewarded and unnoticed."

"Last of all, we ask the supporters what it is all about. We paid for it. The teachers were rated and all paid bonuses—\$3,700 worth. The

(Continued on Page 67)



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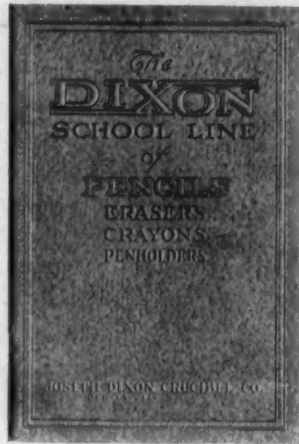
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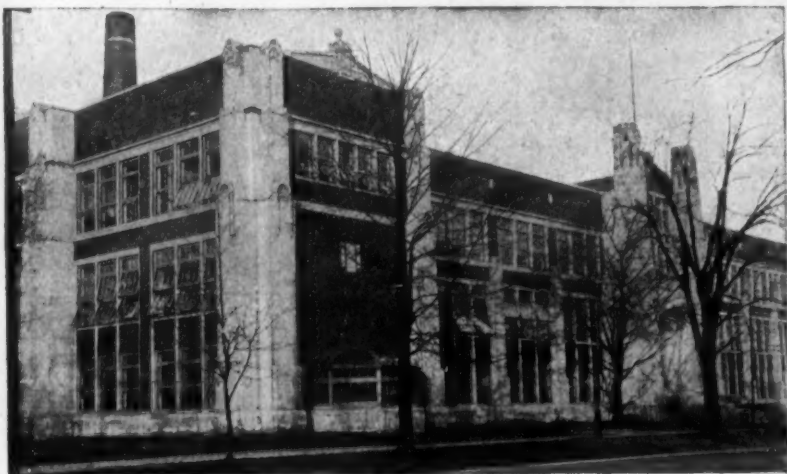
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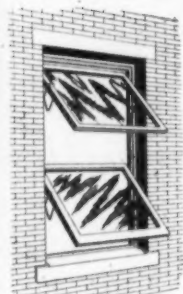
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(Continued from Page 64)

children were all tested and rated. The reports are in and the information tabulated. Now what will be done with the information? What is it all about?"

The thousands of public school teachers in the United States are exempt from income taxes on their salaries as teachers, according to the Internal Revenue Bureau, in explanation of the announcement that salaries of public officers and employees of county, city or other municipal or local governments are not taxable. The provision in the law is applicable only to teachers who receive pay from a public source.

Rochester, N. Y. The board has adopted a new salary schedule which is to be effective in September. The schedule provides for a minimum salary of \$800 and a maximum of \$1,500 for kindergarten and grade teachers. Teachers now receiving \$600 a year are to receive increases of \$200 a year beginning with September, in addition to automatic increases of \$100 a year. The latter provision has been made in fairness to the experienced teacher, who otherwise would under the new plan receive a smaller salary than a beginner.

Nyack, N. Y. The board has fixed the minimum salary of reappointed grade teachers at \$1,000, those with regents grades at \$1,100 and high school teachers at \$1,200. To reappointed teachers not receiving increases of at least \$200 on the above schedule, a twenty per cent raise has been given. The superintendent's salary has been raised to \$4,000.

At a public mass meeting held in Pittsburgh on February 21, 1919, resolutions were adopted in favor of an appropriation by the legislature of \$10,000,000 each year for the salaries of teachers in the Keystone state. The citizens of the commonwealth are urged to call upon their representatives in the legislature to take steps for obtaining abundant resources for each district. The money is to be used for the increase of teachers' salaries equal to 25 per cent of the amount now received from the state.

East Chicago, Ind. The school board has raised the salaries of all the teachers in the schools. Class One teachers have been given a minimum

salary of \$100 and a maximum of \$130; those in Class Two, a minimum of \$110 and a maximum of \$140; Class Three teachers are given a minimum of \$120 and a maximum of \$150; Junior High School teachers begin at \$130 and work to a maximum of \$160; Senior High School teachers start at \$140 and reach a maximum of \$175, and heads of departments begin at \$160 and reach a maximum of \$200. The superintendent of schools has been given an increase of \$500, making his salary \$4,500.

Grade, special and kindergarten teachers in East Chicago are divided into classes on the basis of (1) two, three or four years' training in normal or college; (2) length of service; and (3) success and personality.

Columbus, O. The board has adopted a revised salary schedule for teachers who have been in the employ of the board five months or more. The increases which will be payable on the first of September each year, are not applicable to teachers who have been in the service for a number of years.

Quincy, Mass. The teachers of the lower grades are dissatisfied with the increases of \$50 given them by the board and have petitioned the city council for further increases of \$50.

The Indiana house has passed a bill providing for an increase in the minimum salary of teachers. It provides that the daily wage of teachers which are based on the average they make in examinations multiplied by two and one-half, shall now be multiplied by four.

A recent report of the salary committee of the Educational Council of Minneapolis shows that eleven per cent of the teachers were unable to live on their salaries for 1918 and thirty per cent saved nothing. A number of teachers who bought Liberty Bonds were compelled to sell them when they were paid for and others were able to save only by great sacrifices in the shape of clothes and recreation.

The Federation of Teachers' Associations of Brooklyn, N. Y., has amended its salary bill providing that no teacher or supervisor shall receive more than a \$250 increase in salary in any one year. The change removes an objection against the granting of higher pay to supervisors and higher paid teachers.

SCHOOL LAW NOTES.

The Supreme Court of Illinois has handed down a decision declaring section 89 of the school law unconstitutional on the ground that it confers legislative power upon the county superintendent. A new measure has been introduced which will remove all objectionable features.

Under the law a community high school might be created by a majority vote of the persons affected upon petition of fifty electors.

The teachers' association of Newburyport, Mass., has employed an attorney to take care of the teachers' side in the controversy over the payment of salaries withheld from teachers because of absence during illness. The rules of the board provide that teachers absent from duty may on approval by the executive committee and the superintendent, be paid their salary during enforced absence. A study of the different cities in the vicinity shows that a number of them allow from ten to twenty days' pay during illness.

An increase in the mill tax rate from 3.1 to 4 mills is provided for Milwaukee in a bill introduced in the Wisconsin legislature. The increase is conditioned on the school board by resolution, to take effect not later than January 1, 1920, fixing the minimum salaries of all teachers in common or graded schools at not less than \$900 and \$1,500 respectively.

The Deal bill providing for an appropriation of \$2,000,000 per annum for two years, to aid the rural schools of Texas has been passed by the state senate. The law increases public school facilities in small towns and rural districts by providing longer terms of not more than nine months and increased salaries for teachers.

A consolidated state board of education is provided in a bill introduced in the Oregon legislature creating a board of six members. The members of the board who are to be appointed by the governor consist of the superintendent of public instruction, who is to be an ex-officio member, and five other persons.

The McKinley free textbook bill was killed in the Indiana legislature by a vote of 39 to 34.

A new teachers' pension law is to be introduced in the Indiana legislature to replace the present law. The number of years a teacher has



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taught is multiplied by twelve to determine the annual pension. A teacher who has taught 25 years would receive \$300 annually. The pension fund would be supported by a tax levy.

Schools and School Districts.

Under the Oklahoma Sess. Laws of 1913, c. 219, art. 6, § 2, territory outside limits of any city or town within an independent school district may be detached on petition to county superintendent signed by the majority of qualified electors residing in territory sought to be attached, and such order does not require that such district have notice of such intended action.—Fowler v. Green, 176 P. 222, Okla.

An Order by county superintendent detaching territory from an independent school district under the Oklahoma Sess. Laws of 1913, c. 219, art. 6, § 2, on a proper petition requesting such action, if no appeal is taken therefrom after expiration of ten days, becomes final.—Fowler v. Green, 176 P. 222, Okla.

Under the South Dakota laws of 1913, c. 194, as amended by the laws of 1917, c. 218, residents of a certain school district, who simply moved to another district temporarily but who never intended to change their residence remained "electors" of the first district and were not disqualified to sign petition of such district for election to determine the question of consolidation while they resided in the other.—Viktora v. Cressman, 169 N. W. 551, S. D.

Irregularities which did not deprive any voter of a fair chance to register his will, or which did not prevent the will of the voters from being fairly and truly ascertained and declared, did not vitiate the school district election to determine the question of consolidation.—Viktora v. Cressman, 169 N. W. 551, S. D.

In view of the revisal in 1908, of § 4129, as amended by the North Carolina laws of 1909, c. 856, and the laws of 1911, c. 135 (revised supplementary code of 1913, § 4129), the formation of a special school district is justified, where the jury found the district had less than 65 children of school age, but contained at least twelve square miles of territory.—Williams v. Polk County Commissioners and Board of Education, 97 S. E. 478, N. C.

School District Government.

On an appeal from surcharge of school directors for paying teachers' salaries in excess of those fixed facts found by the lower court are not reviewable, as in view of the act of May 3, 1909 (P. L. 392), an appeal lies only from the legal conclusions in such a case.—Steinmetz v. Fennessy, 104 A. 870, Pa.

School District Property.

If circumstances require the erection of primary school building by school township trustee, and require also that high school be established, trustee, in good-faith discretion, may erect a building adequate for both, subject to the limitations of the Indiana acts of 1913, c. 134, § 2, and the Constitution.—Smith v. State, 120 N. E. 660, Ind.

A school township trustee had power to revoke his predecessor's decision to erect a high school building, under the Indiana acts of 1913, c. 134, § 2.—Smith v. State, 120 N. E. 660, Ind.

The Indiana acts of 1913, c. 134, § 2, if mandatory as to fact that high school building shall be erected in school township when stated conditions exist, still leaves school township's trustee alone empowered primarily to determine character and size of building required.—Smith v. State, 120 N. E. 660, Ind.

The language of the Indiana acts of 1913, c. 134, § 2, that high school building shall be erected when there is no high school within three miles of any boundary line of township, must be construed to mean what it says, and measurement of three miles by straight air line, instead of by road distance, is proper.—Smith v. State, 120 N. E. 660, Ind.

A public school district of a city furnishing free education under the Wisconsin constitution, art. 10, § 3, is not liable, for injuries received by a pupil, who fell into a pail containing hot water, caustic acid, and chemical compounds placed in the passageway of the school building for purpose of scrubbing floor; the pail having been so placed in the discharge of its governmental duty.—Juul v. School Dist. of the City of Manitowoc, 169 N. W. 309, Wis.

School District Taxation.

Under the Wisconsin statutes of 1917, § 40.09, subd. 5, and section 40.26, subd. 1, a school board cannot expend more in the construction of a school building than is voted by the electors.—O'Laughlin v. Dorn, 169 N. W. 572, Wis.

If the electors of a school district had power without exceeding the tax limit to vote \$2,250 for a school building at the time they voted \$1,700, they could later ratify and approve acts of the school board in expending \$2,250 in the construction of a school building, under the Wisconsin statutes of 1917, § 40.09, subd. 5, and section 40.26, subd. 1.—O'Laughlin v. Dorn, 169 N. W. 572, Wis.

A special school tax district is within the provisions of the North Carolina constitution, art. 7, § 7, restraining counties and other municipal corporations from levying taxes except for necessary expenses unless approved by the majority of the qualified voters therein.—Williams v. Polk County Commissioners and the Board of Education, 97 S. E. 478, N. C.

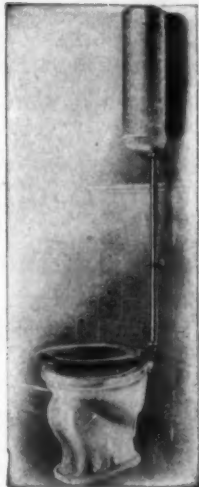
One seeking to enjoin a levy of tax by a school district on the ground that the Wisconsin constitution, art. 11, § 3, limiting the indebtedness of any such corporation, was violated, has the burden of so showing.—O'Laughlin v. Dorn, 169 N. W. 572, Wis.

The Idaho laws of 1913, c. 14, prior to an amendment by the laws of 1917, c. 59, authorizing the trustees of independent school districts to acquire sites for a gymnasium and playgrounds and to sell bonds therefor, did not authorize levy of a special school tax for the care of a gymnasium and grounds, where no bonds were ever issued and the tax was in addition to the maximum school taxes authorized by the Idaho laws of 1913, c. 159, prior to the amendment by the laws of 1917, c. 59, Ida.

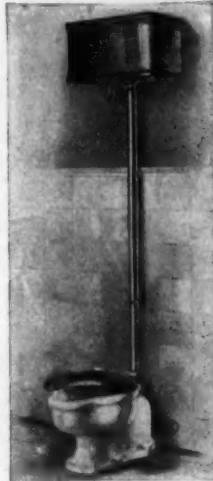
A school board's acquiescence in a payment of the tax collector's commissions out of taxes collected for school purposes does not estop the board from asserting in action therefor its right to amount deducted from school taxes for such purpose during past years.—City of Winchester v. Board of Education of City of Winchester, 206 S. W. 492, Ky.



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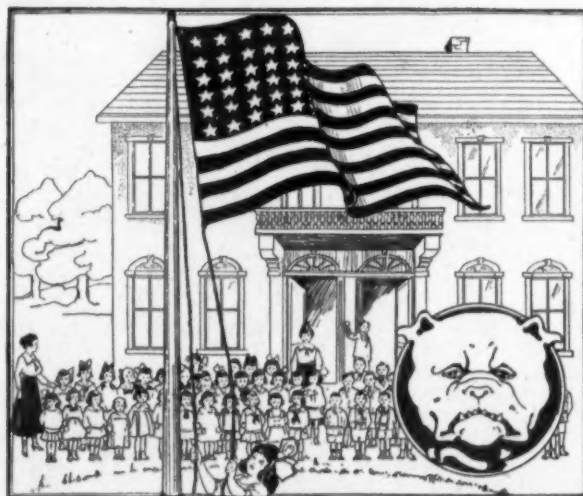
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For Sale by all First Class Dealers



Going to "Fix Up" Any of Your School Buildings This Year?

If your plans for 1919 include the erection of a new school, or alterations in any of the old buildings, then you are interested in plumbing fixtures.

Every one of us appreciates the absolute necessity of cleanliness and sanitation. How can any toilet room be clean and sanitary without the right kind of plumbing fixtures? This is the question you must answer for the boys and girls in your schools whom you represent.

Your judgment in the selection of plumbing fixtures should be beyond criticism.

"NONCO" PLUMBING FIXTURES

challenge criticism, and you cannot go wrong if you specify "Nonco" Fixtures for the toilet rooms in your schools.

There are two grades of "Nonco" Plumbing Fixtures—both a "good buy" for the money. The fixtures made of Vitreous China will last as long if not longer than the school building itself. The Enameled Iron fixtures will stand the test of hard and constant use.

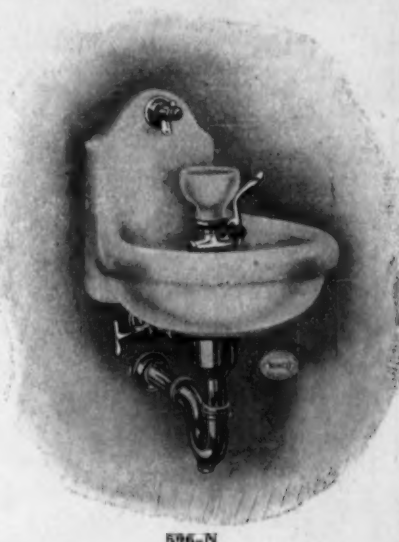
Thirty-six years of satisfactory service to the schools of the country puts our experts at your service to help you solve your plumbing problems.



Why not drop us a line today?

N. O. Nelson Mfg. Co. Edwardsville, Ill.
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SCHOOL BOARD NEWS

Pontiac, Mich. The board has adopted a new plan, providing that teachers shall be given increases of \$100 for three years if they attend summer schools, take extension courses or travel sufficiently to equal summer school training.

Salem, Mass. The board has made permanent the increases of \$100 given to teachers and janitors and has granted further increases of \$100 to all teachers except principals.

Philadelphia, Pa. The finance committee of the board has recommended a rearrangement of the salaries of clerical assistants of the administrative department. These clerks are employed for the calendar year and the service rendered by them is 25 per cent greater than that of similar workers in school offices.

Uniform salary increases for teachers in second and third class cities of New York State are provided for in a bill introduced in the state legislature. Under the bill, the salary of teachers in elementary schools will be fixed at \$800 a year with eight annual increases of \$75. Special teachers and supervisors will be given not less than \$900 a year, while principals are to receive not less than \$400 in excess of the highest paid teacher in the school of which he is principal. Teachers in high schools in second-class cities will receive \$1,000 a year, with annual increases of \$75 in not less than eight increments. Assistants to principals and heads of departments in high schools will receive at least \$1,200 while principals will be given at least \$500 more than the highest salary paid any teacher. Superintendents of schools in second-class cities will be given \$5,000 a year.

Kindergarten teachers and those in the grades in the elementary schools in third class cities are designated to receive \$720 the first year and an annual increase of \$80 for eight years. Special teachers are to be given at least \$100 more a year while principals are to get \$400 more than the highest paid teacher.

High school teachers in third class cities are given \$840 the first year with at least eight annual increases of \$75; assistants to principals and heads of departments, at least \$1,040 and principals \$500 higher than highest paid teacher. The superintendents of schools in these cities are

to receive \$3,000 a year. The Malone measure is intended to meet the demands of salary increases asked for by the teachers.

Steubenville, O. Increases of ten per cent in salary have been granted to teachers and janitors of the schools. The increases became effective with the second term in February.

Battle Creek, Mich. The board has given increases of \$100 to each teacher, with an additional bonus of \$50. The minimum pay of teachers has been raised from \$700 to \$850.

Columbus, O. The board has adopted a revised schedule of salaries thru which it is planned to eliminate inequalities in the present method of paying teachers. Under the new plan it is not planned to readjust the salaries of teachers who have been long in the service but an automatic increase schedule applying to all teachers in the service five months or more, is to be put into effect.

All teachers will be divided into three divisions, namely, elementary, intermediate and high school. Each teacher will be given an increase of \$50 a year for four years, and thereafter \$100, until the maximum is reached. Teachers from other cities will be given credit, one year for three, two for five, and three for seven years' experience.

Under a new rule, all complaints of inadequate salaries must hereafter be made by groups as respectively classified.

Brockton, Mass. The board has asked the city authorities to grant increases of \$100 to teachers.

Rochester, N. Y. The board of estimate has recommended that the board increase the salaries of the principals and teachers in the schools 13.6 per cent, that the minimum salary be fixed at \$800 and that the maximum be paid after three years' service.

The Pension and Retirement Fund Commission of New Jersey has presented to the legislature its report on the investigation of the two retirement systems now in existence for teachers.

It is shown that the retirement fund supported by the teachers is insolvent, with a deficiency of \$15,000,000 and assets sufficient to pay only approximately twenty cents for each dollar expended, and that it cannot be made solvent by the contributions of its members. The 35-year

service pension system, supported entirely by the state, involves a liability of approximately \$23,000,000 and is too burdensome for the state to maintain without contributions from the teachers.

It is pointed out that a majority of the retiring teachers receive benefits from one and the other system and enjoy, after retirement, a greater allowance than the salary they were receiving while in active service. Such excessive benefits are inequitable and economically and administratively unsound.

With the idea that the two systems can no longer continue to operate separately and that there can be no justification for maintaining double benefits, a bill has been prepared which will provide for the gradual merging of the two systems into one sound system, to be established on an actuarial system and intended to equitably distribute the benefits among the teachers.

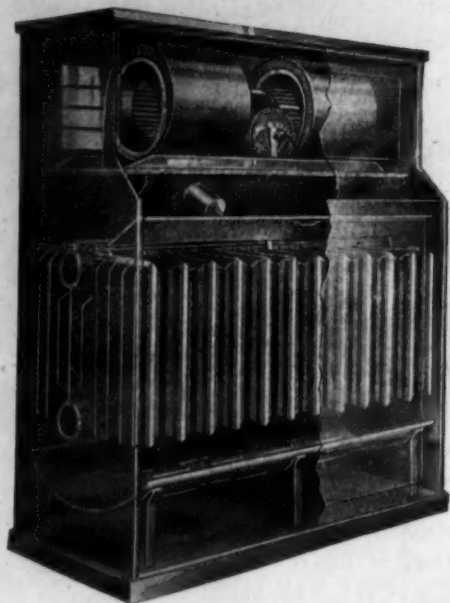
The bill combines the best features of sound pension systems established in this country and abroad. Membership in the system is to be compulsory for new appointees and optional for teachers now in service. Retirement is to be optional at 62 years of age or in case of disability any time before that age, provided the disabled teacher has served ten years in the state.

The allowance is to be calculated at the rate of one-seventieth part of the salary for one year's service, including teaching experience in other states up to ten years and is fixed at a minimum of \$400 in case of superannuation and \$300 or thirty per cent in case of disability. In case of resignation, dismissal or death the contributions paid in by a member are to be refunded to him or to his estate just as in a savings bank, together with compound interest at three per cent.

The teachers and the state will share equally in the cost of the benefits on account of all services rendered hereafter. The contributions of the teachers are fixed according to age at the time the teacher enters the system and they range between three and one-half and seven per cent of the salary. All contributions cease at the age of 62 after 35 years of service.

The Indiana house has passed the teachers' pay bill providing for increases of approximately sixty per cent in the salaries of teachers.

At Last—a Perfect Heating



Open View

The
UNIVENT
"LIVE OUTDOORS—INDOORS"



Closed View

**Cuts Down the Cost of School Building and Provides
a Real, Fool-Proof Heating and Ventilating System**



Applied to the Kindergarten

A vexing problem has been solved.

Many are the engineers who have attempted the solution—and failed.

The combination of proper heating with absolute ventilation in one unit has long been dreamed of and much talked about but while many haphazard systems have been devised, no really efficient, fool-proof system had yet been invented until the able engineers of "Moline Heat," Moline, Ill., produced the UNIVENT. The very simplicity of the machine makes it proof against all the ills to which complicated machines are subject.

One machine in a schoolroom will furnish heated fresh air taken direct from a window or an inlet in the wall, in any quantity, and hand or automatically regulated to any temperature desired.

A self-contained UNIT and ABSOLUTE DIFFUSION are the two big arguments which will eventually place the UNIVENT far in the lead of makeshift systems which have promised much but in actual practice perform on a hit or miss basis. You need only draw on your experience to see the truth of this statement.

MOLINE HEAT

and Ventilating System

The Greatest improvement in Schoolhouse Heating and Ventilating in the History of Man—a Self-Contained UNIT System of Absolute Efficiency.



Used in First Junior High School, Trenton, N. J.
This city has six large schools equipped with UNIVENTS

WE CLAIM that the UNIVENT will aid materially in reducing fire hazards. DUCT systems frequently carry fire and smoke from one story to another in school buildings.

We claim every advantage for the machine which follows upon local and individual control.

We claim a 100% diffusion of the heated fresh air on the principle of an inverted Niagara.

We claim better, quicker and more even heating—72° or as required at both ceiling and floors as well as in front of windows—and no radiators are required in the room except in very special cases.

We claim better control of temperature regardless of outside conditions.

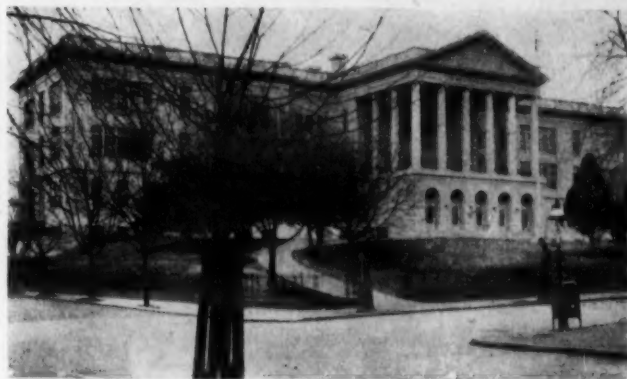
We claim a decided saving in fuel. There are no tremendous losses through radiation as is characteristic of the duct system.

We claim a marked economy in electrical power where the UNIVENT is used.

We claim the lowest maintenance cost as compared with any other system.

Now wouldn't a unit system like this be just the thing for that contemplated new school or for that old building that is so hard to heat and ventilate? Think it over and remember this—if you have a duct system now you can practically add a story to your building by changing over to the UNIVENT. All those unsightly basement ducts can be entirely eliminated, giving additional study or classrooms.

For full particulars and a finely illustrated catalog fully covering the UNIVENT and its application write Dept. J, Moline Heat, Moline, Ill.



Used in Western High School, Washington, D. C.
UNIVENTS replaced a Duct System here, adding another story to the building

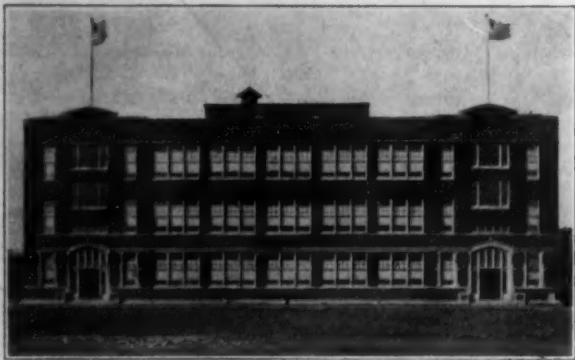


Used in Utica, N. Y. Free Academy
In all, 110 UNIVENTS are installed in this school



MOLINE, ILL.

What They Say About Perennial Window Shades



LANESBORO PUBLIC SCHOOLS
LANESBORO, MINNESOTA

November 20, 1918.

Perennial Shade Company,
Faribault, Minnesota.

Gentlemen: Our new building, which we took into use in September, is equipped with Perennial Shades thruout.

Altho we have used the curtains for only a short time we feel that we have made a wise selection. They are giving splendid satisfaction in every way. I consider them one of the best if not the best shade on the market.

Yours truly,
EDW. INGVALSON.

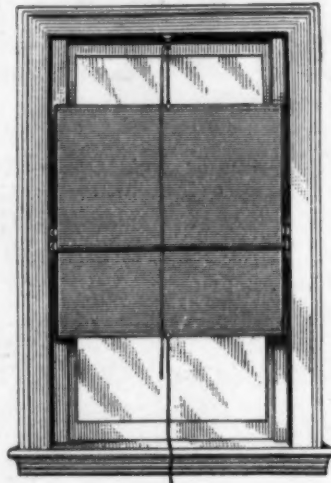
Write us today for further information.

PERENNIAL SHADE COMPANY
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CORRECT SHADES FOR SCHOOLROOMS

Should give maximum light
with good ventilation

TWO
SHADES AT
CENTER
OF WINDOW
PERMIT
PROPER
REGULATION
OF LIGHT



OUR SPECIAL
BRACKETS
No. 86 & No. 87
ARE
DESIGNED TO
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OSWEGO TINTED CAMBRIC OR TRIPLEX OPAQUE
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HARTSHORN SHADE ROLLERS

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WATCH THE CHILDREN'S EYES

EYE STRAIN RELIEVED AND CERTAINLY AVOIDED
IF YOUR SCHOOLROOMS ARE EQUIPPED WITH

E L T
EVER - LASTING - TRANSLUCENT

WINDOW SHADES

(superior plied yarn fabric)

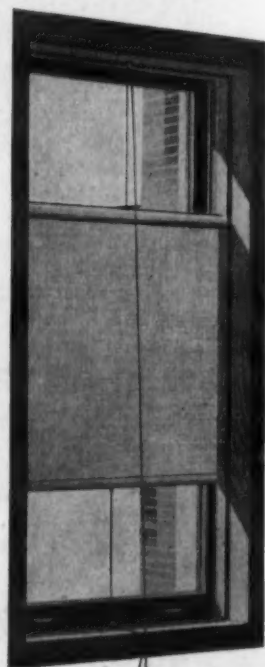
WITH OR WITHOUT

**SELF BALANCING
ADJUSTABLE FIXTURES**

**TRANSLUCENT—
NOT OPAQUE
DULL FINISH—
NO GLARE**

If your school supply house does not handle our E L T Shades, write for our folder.

Upon receipt of a set of plans, or a list of window sizes, quotations will be furnished at once.



E. L. T.
SHADE MATERIAL
Mounted on
Self-Balancing Adjustable
Shade Fixtures

THE ORIGINAL

WALGER
WINNING COMPANY
561 W. MONROE ST., CHICAGO

ESTABLISHED
1905

ESTABLISHED
1905

Some Plain Facts About Draper's Cotton Duck Adjustable Window Shades

Draper Shades have no folds or pockets to catch and hold dust and germs.

Draper Shades make it possible to let in the best light which always comes in at the top of the window.

Draper Shades permit perfect ventilation of air at all times.

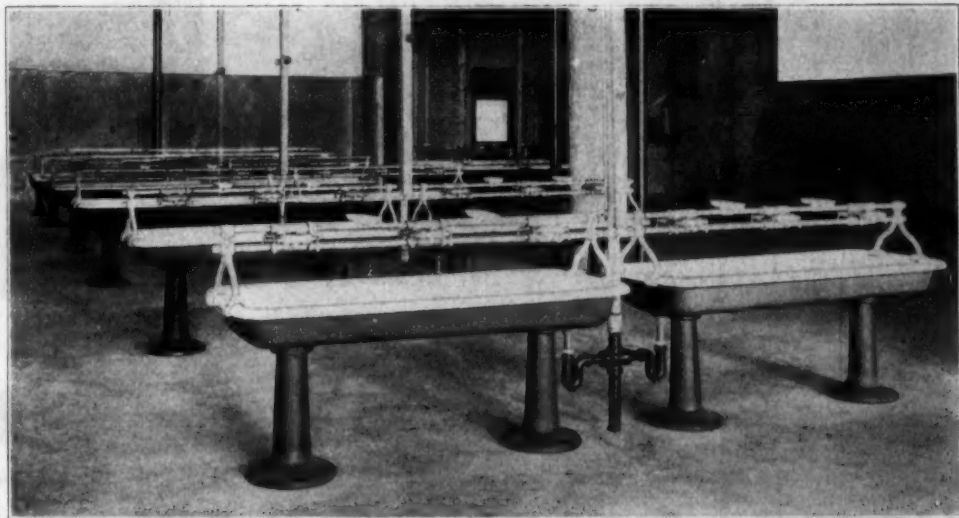
Draper Shades are made of a good, substantial material. The rollers are large and strong and will stand up under the roughest kind of handling.



Tell us how many windows there are on the sunny side of the school building, give us the size of the windows and we will gladly quote you prices.

LUTHER O. DRAPER SHADE CO.
Spiceland, Ind.

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Washrooms of the Continental Can Company of Clearing, Illinois.
J. J. Daly, Plumbing Contractor.

WHEREVER long life, constant service and high efficiency are demanded of plumbing, there **WOLFF** Products command the interest of owner, architect and contractor.

For installations of any size specify **WOLFF** Plumbing and be safe.

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General Offices 255 N. Hoyne Ave., Showrooms, 111 N. Dearborn St.,
Chicago, Illinois

ARCHITECTURAL STYLES AS APPLIED TO SCHOOL BUILDINGS.

(Continued from Page 28)

sary, if the characteristics of the style are to be followed, to have the windows regularly spaced with large piers and wall spaces between. This makes it difficult to get the twenty or twenty-five per cent of glass area in the classrooms without the use of windows on two sides of the classroom, thus violating unilateral lighting which is one of the accepted principles of school-house designing. In Classic buildings the wide piers between windows cast objectionable shadows on the pupils' desks, which everyone agrees should be avoided.

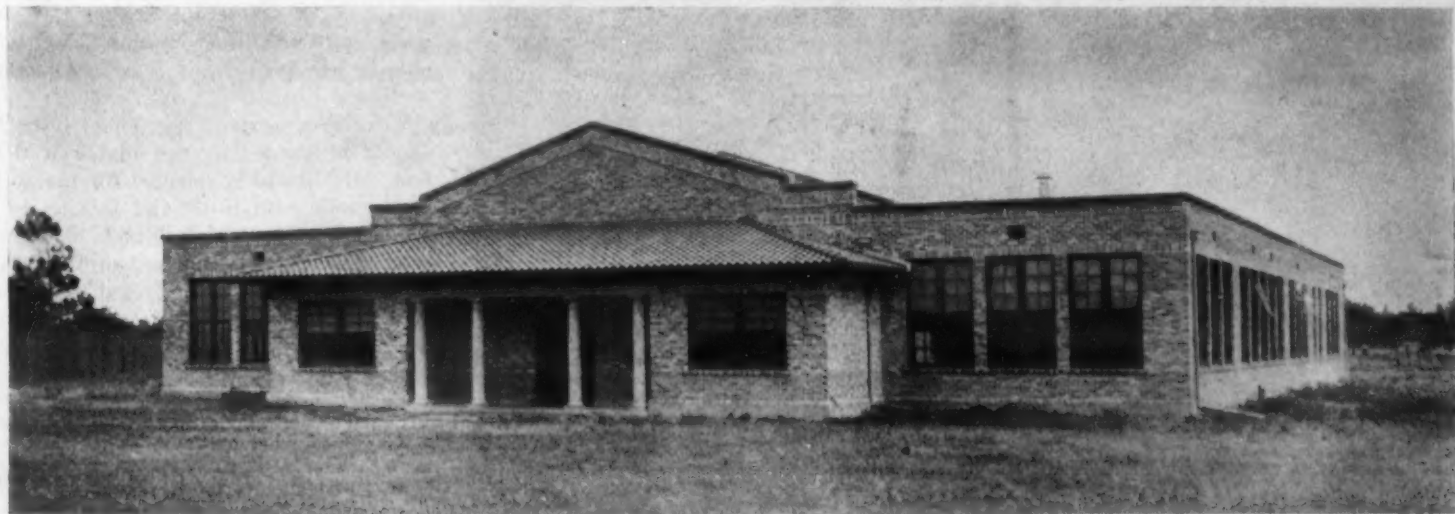
The Collegiate Gothic style is also slightly cheaper to build than the Colonial in Classic

style, because it does not require the heavy cornices, balustrades, pediments, or high pitched roofs, which are so characteristic of the Colonial period.

While Collegiate Gothic may be admitted to be the most appropriate style when there are no limiting conditions, all other factors should be considered when making a choice. The fact as to whether the building is located in a country district or in a thickly populated neighborhood should be thought of, and even the contour of the property has a bearing upon the decision. Obviously the same style would not be appropriate for use in a small town that would be suitable for use in a densely populated neighborhood in New York City.

In the illustrations of all the larger build-

ings, it will be noticed that there is an absence of high pitched roofs, towers, domes and other architectural elements that are entirely decorative, and which are not only costly but serve no useful purpose. Ornament applied to the walls of a building is always expensive, and when standing one hundred feet or more away from the building it cannot be seen. At the distance from which buildings are generally viewed, it is only its general outline and proportions, together with the spacing of the window and door openings that is noticeable, and style and general pleasing effect should be obtained by proper treatment of the large masses rather than piling on elaborate, costly, and useless ornament. In smaller buildings, visible roofs and cupolas are often used, to help give



VENICE UNION POLYTECHNIC HIGH SCHOOL, SHOP BUILDING, VENICE, CALIFORNIA. C. H. Russell Co., Architects.
This is a building devoted to shops in connection with a Polytechnic High School. It is simple and appropriate and has the atmosphere of a high class factory building.



Combined Balopticon
For Lantern Slides and Opaque Objects
Price \$135

Bausch and Lomb Balopticon

THE PERFECT STEREOPTICON

for every practical form of optical projection is again in the market, backed by increased facilities which have been occupied in war service of a most significant character.

Our release from this service is of course gradual. As the demands made upon us by the government are lessened from month to month, however, we are enabled to increase deliveries to our other patrons.

Write for Balopticon catalog, with price list of our revised line, and inform us regarding your requirements.

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Leading American Makers of Photographic Lenses, Microscopes, Projection Apparatus (Balopticons), Ophthalmic Lenses and Instruments, Photomicrographic Apparatus, Range Finders and Gun Sights for Army and Navy, Searchlight Reflectors, Stereo-Prism Binoculars, Magnifiers and other High-Grade Optical Products.



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Microscopes and Delineascopes

POSSESS MANY

SUPERIOR FEATURES

WHICH MAKE THEM IDEAL FOR
LABORATORY USE



MODEL "O" DELINEASCOPE

with the Spencer Transposer, a mechanical device for handling the lantern slides which does away with the old cumbersome, troublesome lantern slide holder, and in addition gives a dissolving effect on the screen, which is accomplished with but one outfit (not two).



MICROSCOPE No. 64 B

MICROSCOPE No. 64 has a side fine adjustment with 34 threads of the screw engaged as compared with an equivalent of but one in other makes. It has a "lateral travel"—an index to its position relative to its limits. No other make has this. It is equipped with Spencer Optics, which have been considered ideal for three-quarters of a century. SEND FOR CATALOG.



SPENCER LENS COMPANY

BUFFALO, N. Y.



style and character to the structure. While this adds to the cost, it is not so great but that the added dignity and importance such elements produce, make it worth while. In a very large building covering an acre or more in area, a high sloping roof would be very expensive and unnecessary. A building of this area is of suffi-

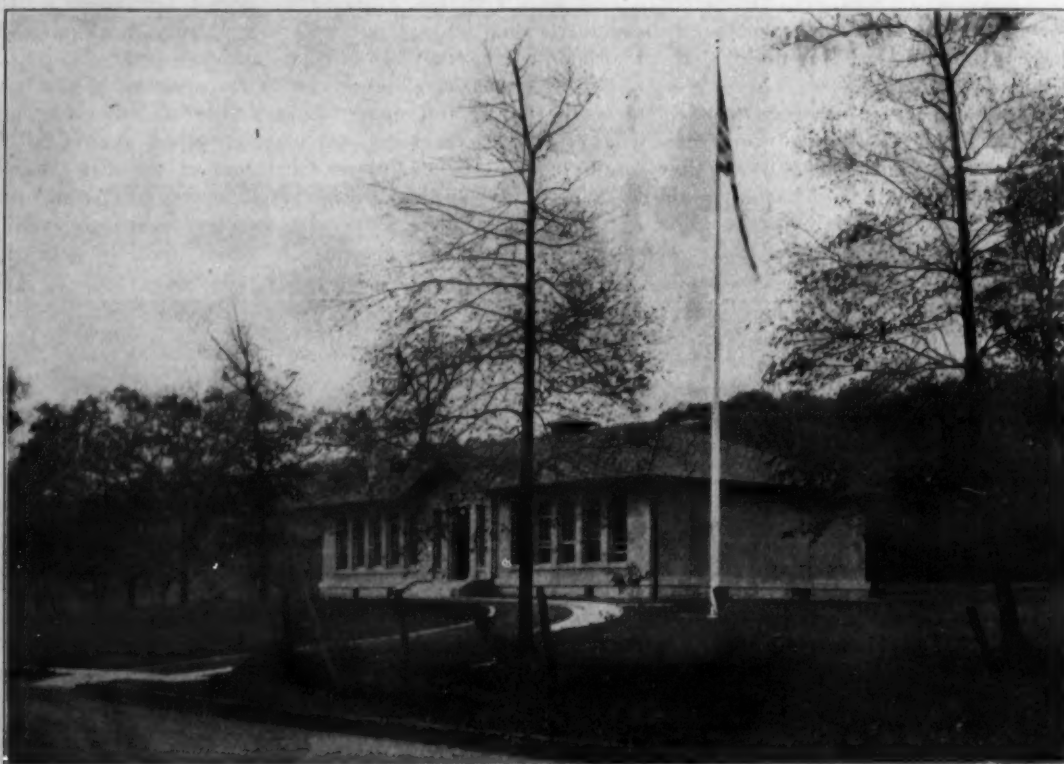
cient size to impress its importance upon the neighborhood without the necessity of high, pitched roofs or clock towers.

A building should not only have an appropriate architectural style, but it should look like a school building, and in addition should express the kind of school which it contains.

At a glance one should be able to tell a grade school building from a high school, or if it is the only school in the town and houses all grades, one should be made to realize it instinctively. It hardly seems necessary to say that a grade school should be designated with the greatest of simplicity, while a high school may be a little more elaborate in design. A Vocational or Trade School should express the purpose for which it is used, those portions occupied by the shops should resemble in character the modern factory, while those used for academic purposes should be in character with the usual school building. The portions occupied by the auditorium and gymnasium should be designed to indicate this fact. To be good architecture, the design of the exterior of the building should express the character and purpose for which the interior of the building is used, as "truthful expression" is just as desirable in architecture as it is in all other things in life.

To a great extent the school board member should be guided by the advice of their architect. He has been selected for his ability, education and good taste, and this being the case, his advice should be followed. It is well, however, that the school board and superintendent of schools should be informed upon the subject of architectural styles so as to be able to confer more intelligently with their architect and understand his point of view.

The free dental clinic conducted at Springfield, Mass., in the period from June, 1918, to March, 1919, has treated four hundred children for defects of the teeth. It has been possible for the dentists to complete the dental work for all second and third-grade children and the work will continue regularly from one grade to the next.



GREGORY SCHOOL, WEST ORANGE, N. J. Dillon, McLellan & Bendel, Architects.

This is a good example of a Community School used in a rural district. Its low height, sloping roof and stucco exterior make it not only attractive, but makes it harmonize with the surrounding buildings. In fact the school fits in and becomes part of the attractive neighborhood and the people look upon it more as a Club or community meeting place than a formal and forbidding schoolhouse.



An Achievement in Piano Construction

How this little piano, which stands only 3 feet, 7 inches high, can possess a tone as big and full as that of any full-sized upright, and remarkably pure and sweet besides, is the wonder of all teachers, musicians and piano manufacturers who have heard it.

THE MIESSNER PIANO

"The Little Piano With The Big Tone"

The secret lies in the use of entirely new principles of piano construction, which result in lessening the tension, thereby adding materially to the tone-keeping qualities of the instrument.

"Factory to School Room" Plan

No less revolutionary is the "Factory to School Room Plan," which enables you to place one of these superb little pianos in your school at about one half the cost of a usual-sized upright of standard make.

Furthermore, you have the privilege of ten days' trial—you do not pay a cent until you have had ample opportunity to satisfy yourself of the piano's quality.

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Fill out and mail the coupon now—you will be placed under no obligation whatever. You will be interested in reading all about this wonderful little instrument, which has created a sensation among educators.

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Without any obligation on my part, please send me your illustrated booklet and full information about your "Factory-to-Schoolroom" Plan.

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Writing correct idiomatic letters in Spanish.

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Simple connected narrative dealing with every-day episodes in familiar surroundings.

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A charming method of presenting the essentials of English composition and grammar in the secondary school. The author recommends the revival of such old fashioned arts as reading well aloud, and writing a clear hand, and memorizing choice bits of literature. The book is characterized by good spirit, good humor, and good taste.

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Chapters from the American Commonwealth, together with the paper, "Hindrances to Good Citizenship."

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The ideals of America nobly phrased by her statesmen, her poets, her preachers and teachers.

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Fundamental facts with their present day applications.

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The essentials of physiology for high school pupils with the emphasis on right living conditions in the community.

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NEW FEATURES: Word list of common words; regular work with Dictionary; frequent reviews. Ayers' List. "100 Demons," etc.

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Develops speed and accuracy in the fundamental operations. Solves the "language difficulty." In three books, for 2nd, 3rd, 4th year and above. 40c, 50c and 50c, respectively.

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Chas. R. Allen, Federal Board of Education. A book for Vocational Teachers and for those training unskilled workers. It represents the pedagogy of industrial education.....\$2.00

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By L. Ray Balderston, A. M. A text on methods of work in the home. For High Schools and Colleges.....\$2.00

Send for circulars and terms.

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make a strong appeal to the child. The method creates a desire to read, and leads him quite unconsciously through the technique into the delightful art of reading. Recommended by educators of importance and already adopted by many prominent school systems.

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because they are based upon psychological and pedagogical principles; because they contain some of the best literature which the world has produced; because they are arranged in logical order of content and word-forms; and because there are six readers especially adapted to each of the six elementary grades.

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The Fox Method has been formulated by the Specialist in Educational System in the United States Bureau of Education. Miss Florence C. Fox brings to this work not only the authority of her position, but a lifetime of study and experience in teaching children to read. The Fox Method offers a new and essential element in teaching reading; it emphasizes economy of time and of effort; it is based upon subjective rather than objective values.

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because this collection of classics will be placed in the hands of children as a guide to develop their appreciation of good literature; and because the material has been arranged by one of the authorities on good literature for children.

Now Ready:

	Price
The Fox Teachers' Manual, for use with the Fox Readers -	\$0.40
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Send for an interesting circular by an enthusiastic teacher who is using the Fox Readers, which gives the practical advantages of the Fox Method, and startling facts as to the large percentage of pupils who fail in reading owing to the shortcomings of ordinary methods of teaching. Ask for Circular A.J.

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ALBERT PICK & COMPANY

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RECENT ADDITIONS TO THE SHEBOYGAN SCHOOLS.

(Concluded from Page 43)

the old building, the roof coming below the sills of the windows of the first floor in the north wall of the old building. A skylight placed on the roof, and concealed from view in the library by glass panels in the ceiling, adds to the attractiveness of the already pleasant room.

The main feature of the first floor of the addition is the well lighted kindergarten with its double wardrobe and its ample supply cases. There are also on this floor two classrooms and boys' and girls' toilets. The latter are intended especially for the children in the kindergarten. Four exits are provided, two leading to the west, which are for the first floor only, one to the east and one to the north. The two latter adjoin stairways leading to the second floor.

The principal's office, four standard size classrooms with adjoining wardrobes, one large classroom with two adjoining recitation rooms and two wardrobes, are located on the second floor of the new building. The last mentioned room is to be used for Junior High School classes. A girls' toilet is located on the second floor in that portion of the building which forms the connecting link between the two buildings, thus making it conveniently accessible for the girls of both buildings. Each classroom is supplied with a bookcase and teacher's closet. A general supply case and map case are located in the corridor of the second floor.

Stairways from all four entrances lead to the basement where the manual training, domestic science rooms, and boys' and girls' toilet and shower rooms are located. An inclined passage leads directly from the basement to the outside. The boiler room is located in the basement of

the old building and a large tubular boiler, with McMillan furnace attachment, was added to the boiler room equipment. By enlarging the boiler room, the girls' toilet room which was located in the basement of the old building, had to be eliminated and for greater convenience, it was placed on the second floor of the new building. The interior trim and furnishings are similar in character and material to those in the schools described above.

The building is heated by an air-line system of steam heating, with direct and indirect radiation controlled automatically from the several classrooms. A gravity ventilation system is used. Fresh air is taken into fresh air chambers in the basement thru two specially equipped windows and is run in a duct under the basement corridor floor to the several indirect chambers where the radiation is placed. The air passes thru radiators and over humidifying pans and then up brick flues into the classrooms. Water is supplied for humidification thru the hot water system and is maintained constantly by an automatic expansion tank. The foul air is drawn thru brick vent flues to the attic and from there by means of galvanized iron pipes to the ventilators on the roof. Sanitary equipment is of the best heavy duty type and of the most approved pattern. Slate blackboards are provided in all rooms and the entire building is lighted by electricity.

BELVIDERE HIGH SCHOOL.

(Concluded from Page 36)

The building is built of red and brown tapestry brick, joints raked out. It has limestone trimmings, Ashlar limestone foundation, with blue stone entrance steps and basement sills. The roof is of slate with copper flashings.

The corridors are of fireproof construction with brick enclosing walls, and stairways of steel and iron with slate treads. The stairs are shut off from the corridors with smoke partitions glazed with polished wire glass and will serve as fire towers in event of emergency. The corridors are wainscoted with light face brick, the floors being of composition with a sanitary cove.

The woodwork is oak, finished French grey. The plaster is finished with white sea sand.

The toilets are of the latest sanitary models. The stall partitions of slate are set on metal standards and the rooms themselves are wainscoted with brick from floor to ceiling.

The heating system is arranged with direct radiation in each room and a steam plenum system with fan supplying fresh warmed air for ventilation. Hose reel fire lines and drinking fountains are provided in each floor. The finish and fixtures were selected with a view to permanency and utility.

In the basement provision is made for a gymnasium. The corridor serves as a spectators' gallery, and the locker rooms are used for the gymnasium as well as the school proper. The toilets are entered thru the corridors extending to locker rooms ensuring privacy.

The boiler and coal room are depressed and are so arranged that they will serve as the basement and foundation of part of the future extensions.

The laboratory is equipped and arranged for complete work in physics, chemistry and biology and an additional room is provided for extension which will probably include the introduction of a course in agriculture. The lecture room serves for science as well as other work and is located directly over the laboratory.

The first floor contains four recitation or

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classrooms and a principal's and men teachers' room with toilet.

Entrance is had to the main floor of the assembly from the first floor corridor, the balcony being entered from the second floor. The assembly is lighted by large circular head windows the full height of room. It has a seating capacity of 400 and a stage with a portable extension front which provides additional area for special occasions.

Toilet facilities are provided in connection with the ante rooms and principal's office. An entrance from the hall to the ante rooms thru the principal's room is provided. The balcony is planned so that it can be used as a study.

The second floor contains two recitation rooms, a women teachers' room and toilet, and a commercial suite arranged with a typewriting and a bookkeeping room with glazed partition separating them.

The building which was dedicated recently was designed by and built under the supervision of Messrs. Rasmussen & Wayland, Architects, New York City, and its cost complete with furnishings, was within the original appropriation of \$30,000.

It is not only fulfilling every requirement of the modern school curriculum but of the community as well and has been used almost nightly in the past year for those activities which tend to promote the spirit of true Americanism in the present as well as the rising generation.

AN APPRECIATIVE WORD.

J. H. Carfrey, Reading, Mass.

It was my privilege recently to visit Plymouth, Mass. These trips are now made two or three times a year and without special thought of the town or its surroundings, having in the past

visited the historic buildings and the various places of interest to the stranger.

At this time I wish to speak particularly of the schools. The present superintendent, Mr. C. A. Harris, has been in charge of the schools for the past six or seven years. His success as a district superintendent before entering upon his work at Plymouth, was marked for its efficiency. His success at Plymouth has been no less marked and the town and school board recognize in Mr. Harris a man who knows his business professionally and otherwise.

In the first year of Mr. Harris' incumbency, \$68,000 was given for school purposes and this past year \$140,000 was appropriated. Teachers' salaries have increased from \$600 to \$950 and the teaching corps has been increased from 60 to 90 instructors. The maximum number of pupils allowed to any teacher is 36, a reduction of at least ten pupils.

The school plant has been placed on a modern basis. New buildings have been erected, old buildings have been enlarged and renovated, and new equipment of an up-to-date character has been installed in every case. The Junior High School of which the town and the school authorities are particularly proud, is well equipped and is doing effective work in meeting the needs of every student. The cooking department particularly has shown the wisdom of carefulness and good judgment in the selection of its equipment.

The Junior High School is conducted on the regular departmental plan and each teacher is a specialist in the subject she teaches. The Junior High School is the outlet for the grades which are organized on the eight-grade plan. Opportunity is given thru which immature or retarded eight-year students are permitted to advance to the ninth year without repeating the work of the eighth year. The school aims to give opportunity for individual development and to prepare students for high school work. The high school is equipped to carry the student thru a special line of work, to fit him for advanced education or for directly entering some chosen occupation.

In connection with the school system, there is a special school for delinquent pupils who are retarded because of defective mentality. It is

well worth the time of any educator to visit Plymouth to study the school system, and especially to visit the Junior High School. Mr. Harris may well be proud of his work, and the community proud of the schools.

SCHOOL LAW NOTES.

A teacher having completed 23 full years' service, employed during three years at private school, but for \$200 annual salary, giving two fifty-minute periods daily to public school pupils, under the city's contract with private school for teaching service, was a "teacher," within the Wisconsin statutes of 1917, § 42.17, and entitled to annuity under section 42.11, as having completed 25 years' service, notwithstanding rules of the board of trustees of the fund, made after completion of such service under which the two final years' service would have been insufficient.—*State v. Board of Trustees of Teachers' Insurance and Retirement Fund of Wisconsin*, 169 N. W. 562, Wis.

The board of trustees of the teachers' insurance and retirement fund, tho having wide discretion, cannot alter the statutory requirements for pensions, tho it may regulate the manner in which pension rights may be obtained.—*State v. Board of Trustees of Teachers' Insurance and Retirement Fund of Wisconsin*, 169 N. W. 562, Wis.

Where teacher received \$1,200 annually from private school, and \$200 annually from city, doing both private and public school work, under the city's contract with private school for teaching service, and she was assessed for the retirement fund on a \$200 salary only, it was proper to require, before paying her a pension, that she pay into the fund the difference between the assessment on \$200 and \$1,400.—*State v. Board of Trustees of Teachers' Insurance and Retirement Fund of Wisconsin*, 169 N. W. 562, Wis.

Pupils.

Under the New York education law, § 633, defendant school attendance officer had authority to arrest a truant child in the child's own home, altho the child's mother did not consent, and was not a "trespasser" in so doing, if he used no more force than was necessary.—*De Lease v. Nolan*, 172 N. Y. S. 552.



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2	Li	Be																
3	Na	Mg	Al	Si	P	S	Cl	Ar										
4	K	Ca	Sc	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Se	Br	Kr
5	Rb	Sr	Y	Zr	Nb	Mo	Tc	Ru	Rh	Pd	Ag	Cd	In	Sn	Sb	Te	I	Xe
6	Cs	Ba	La	Hf	Ta	W	Re	Os	Ir	Pt	Au	Hg	Tl	Pb	Bi	Po	At	Rn
7	Fr	Ra	Ac	Th	Pa	U	Np	Pu	Am	Cm	Bk	Cf	Es	Fm	Md	No	Lr	

A TABLE OF THE CHEMICAL ELEMENTS WITH THEIR ATOMIC WEIGHTS

Element	Atomic Weight	Element	Atomic Weight	Element	Atomic Weight
H	1.008	Ca	40.08	Sc	44.96
He	4.003	Sc	44.96	Ti	78.92
Li	6.941	Ti	78.92	V	50.94
Be	9.012	V	50.94	Cr	52.00
B	10.81	Cr	52.00	Mn	54.94
C	12.01	Mn	54.94	Fe	55.85
N	14.01	Fe	55.85	Co	58.93
O	16.00	Co	58.93	Ni	58.71
F	18.99	Ni	58.71	Cu	63.54
Ne	20.18	Cu	63.54	Zn	65.37
Na	22.99	Zn	65.37	Ga	70.30
Mg	24.31	Ga	70.30	Ge	72.64
Al	26.98	Ge	72.64	As	74.92
Si	28.09	As	74.92	Se	78.96
P	30.97	Se	78.96	Br	79.90
S	32.06	Br	79.90	Kr	83.80
Cl	35.46	Kr	83.80		
Ar	39.94				
K	39.10				
Ca	40.08				
Sc	44.96				
Ti	78.92				
V	50.94				
Cr	52.00				
Mn	54.94				
Fe	55.85				
Co	58.93				
Ni	58.71				
Cu	63.54				
Zn	65.37				
Ga	70.30				
Ge	72.64				
As	74.92				
Se	78.96				
Br	79.90				
Kr	83.80				
Rb	85.47				
Sr	87.62				
Y	88.91				
Zr	91.22				
Nb	92.91				
Mo	95.94				
Tc	98.91				
Ru	101.07				
Rh	102.91				
Pd	106.36				
Ag	107.87				
Cd	112.40				
In	114.82				
Sn	118.71				
Sb	121.75				
Te	127.60				
I	126.90				
Xe	131.30				
Ba	137.33				
La	138.91				
Ce	140.12				
Pr	140.91				
Nd	144.24				
Pm	144.91				
Sm	150.36				
Eu	151.96				
Gd	157.25				
Tb	158.93				
Dy	162.50				
Ho	164.93				
Er	167.26				
Tm	168.93				
Yb	173.05				
Lu	174.97				
Hf	178.49				
Ta	180.95				
W	183.85				
Re	186.21				
Os	190.23				
Ir	192.22				
Pt	195.08				
Au	196.97				
Hg	200.59				
Tl	204.38				
Pb	207.2				
Bi	208.98				
Po	209				
At	210				
Rn	222				

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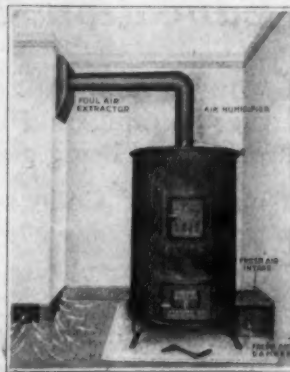
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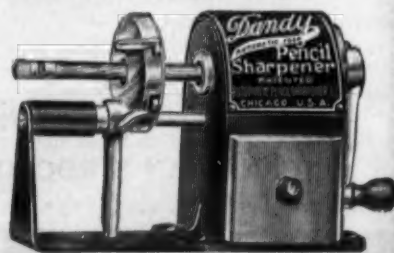
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BUILDING AND FINANCE.

Dayton, O. The school board has adopted a complete set of rules to govern the use of public school buildings, other than for regular school purposes. The rules read in part:

Any responsible organization may have the use of any school at such time as does not interfere with the regular school activities. The school buildings, however, cannot be used for entertainments for which admission is charged, by any organization other than schools or school organizations. The discussion of political and religious subjects is prohibited. The organizations shall be responsible for any damage to building or equipment. Applications for the use of these school buildings shall be made in writing to the clerk of the board of education not less than three days before the date of use. This also applies to school activities, the application to be made by the principal or head of the school organization.

Fees, in accordance with the following schedule, must be paid to the clerk of the board when application is made:

Winter Term—(From October 1 to April 1)—High school auditorium, \$10; grade school auditorium, \$8; high school gymnasium, \$5; grade school gymnasium, \$5; one or more classrooms, \$4.

Summer Term—(From April 1 to October 1)—High school auditorium, \$4; grade school auditorium, \$4; high school gymnasium, \$3; grade school gymnasium, \$3; one or more classrooms, \$3.

Community or improvement association meetings shall have the use of all buildings free of cost other than \$2 for janitor service. The school buildings shall be free for all school organizations and school activities, including meetings of mothers' clubs and entertainments for the benefit of the school. A request for the use of a school building not covered herewith must be submitted in writing to the board of education. The building shall be in charge of the janitor in every case.

Flint, Mich. The Chamber of Commerce has announced its intention to support the board members in their campaign for the adoption of a bond issue of \$1,500,000. The fund is greatly

needed for the erection of a high school and for maintenance of the schools for the balance of the year.

The citizens of Barre, Vt., have asked the city council to amend the city charter permitting a school tax of \$1 on the dollar of the grand list.

During the past two years the little town of Orange, Tex., has erected a modern high school and colored grade school, and has completed a three-story grade school which is about to be occupied. The progress in educational methods which this southern town has abundantly shown is a slight indication of what the state of Texas has accomplished in this direction.

Denver, Colo. The building committee of the board has recommended that three new high schools, six junior high schools and a number of elementary schools be erected to house the school children. The cost is estimated at \$8,000,000.

Cincinnati, O. The board has asked the joint committee on taxation of the Ohio General Assembly for an independent tax levy for school purposes which shall be free from the control of the County Budget Commission. Under the present system the board is compelled to go before the budget commission, present its own budget and then submit to reductions for municipal and county expenses.

The school board of Detroit, Mich., has decided not to separate its budget from that of the other city departments, in order to avoid a reduction in its school revenue. A bond issue of \$10,000,000 is proposed for presentation to the people in the early spring. A further step is proposed providing for an amendment of the city charter taking the school budget out of the city's hands.

Cleveland, O. Ten school buildings have been selected as community centers where returned soldiers, sailors and marines may be entertained. An appropriation of \$5,000 has been made for the maintenance of these centers.

Kennebunk, Me. A gift of \$10,000 has been made toward the Memorial High School. A similar amount will be subscribed by local citizens.

A recent strike of the school engineers of Denver, Colo., has been ended with the agreement of the men to arbitrate the matter before a board of three men named by the board and

the union. The strike affected 34 of the 63 schools of the city, and was caused by a disagreement over the wage question.

The board of school commissioners of Indianapolis, Ind., has ordered that plans be worked out that shall govern the arrangement of floor space and the installment of equipment in the new buildings and additions to be included in the rehabilitation of the schools. It is the purpose of the board that each structure shall provide for every modern school need and that plenty of variation shall be given in working out the architectural designs.

Chicago, Ill. The budget for the next school year is estimated at \$18,000,000, or \$6,000,000 more than the largest one ever prepared by the board. The increased budget is considered very important in view of the increased needs of the schools. It is proposed to ask the legislature for an amendment of the Juul law so that the benefits of the pending Hicks bill may be brought to Chicago as well as other parts of the state.

The United States Department of Labor has estimated that contracts for fully eight hundred schoolhouses, totaling \$80,000,000 have been held up as a result of the war. It is pointed out that complete tabulations will ultimately show that school projects now held in abeyance will aggregate more than \$100,000,000.

The cost of this program is estimated at about \$1 per capita thruout the United States. As school buildings are customarily financed on twenty-year serial bonds, this would mean an installment payment of about five cents per capita per year by the people of the country if they would have their school program carried thru at the present time.

Assuming that a decrease of twenty per cent in construction costs might develop during the next four or five years, the immediate completion of the nation's school program would involve an excess of only one per cent per capita per year over the per capita cost even if construction should be delayed for several years.

The educators of the country are now facing the question whether they shall continue with the erection of the schools at five cents per capita per year, or delay them for four to five years in

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The Department of Labor is forwarding this particular work in the interest of the nation and is emphasizing the fact that one of the earliest problems of the reconstruction period is the widespread lack of school accommodations.

PATRIOTIC ACTIVITIES RECORDED.

Commissioner Calvin N. Kendall of New Jersey recently addressed a circular letter to the principals of high schools and to superintendents of schools, in which he praised the work of the teachers and pupils in patriotic work during the period of the war. Mr. Kendall urges that the work which has been done be made a permanent record for the future and suggests that the schools take the lead in providing for the record.

In urging the schools to undertake the making of the record, Mr. Kendall indicates a practical method of doing the work and offers suggestions for the preparation and installing of display cabinets. He writes:

"There are two ways in which this record may be prepared. First, the upper classes in the high schools, under the leadership of an English teacher and history teacher, should write a brief record of the war activities of the community and of the school, the text being along this line: 'What ——— school contributed to the winning of the war.'

"After a plan has been made, the pupils participating in the making of the plan, the teachers can assign to each pupil a given topic or subject, or chapter as a part of the work in English and history.

"For instance, one pupil may be assigned the work of the Red Cross in the community and the school. He may consult local newspapers, officers of the organization and others who know at first hand about the activities. Another may speak of the food conservation movement and another of the work done in the raising of funds for the Liberty Loan. Another pupil may catalog the names of the young men who went into the service, giving a brief biography of those who lost their lives. This should include the women—those who went abroad in the various branches of the service.

"The whole may then be put together, preferably in typewriting, or better, in printed form. The board of education may be induced to contribute toward putting the whole record into well bound duplicate volumes which may be carefully preserved. The expense will not be great and the commercial department, where one exists, may do the typewriting. One volume should be kept at the school and the other at the public library.

"The second suggestion is that the manual training shops make a cabinet of appropriate size for the reception and preservation of the work of the school in war activities, the whole to be a tangible record of some of the school's activities and the work of the community or town itself.

"The pupils in the high schools may be encouraged and inspired to collect these records. The collecting should not be done by the teachers but by the pupils under the guidance of the teachers. It is valuable training in resourcefulness, initiative and organization.

"In this cabinet may be placed the following:

"1. Samples of Red Cross work done by the school—sewing, knitting, etc.

"2. Letters from former pupils who have been in the service, containing their experiences.

"3. Souvenirs of the war contributed by former pupils of the school. These should be appropriately inscribed or labeled.

"4. Photographs of the former pupils of the schools and of the community who were in the service.

"5. The honor roll of the school.

"6. Samples of the war posters, made by pupils in the school.

"7. Samples of the posters issued by the federal authorities, concerning the various drives. These will some day be very rare, and hence valuable, and of exceeding interest to following generations.

"8. Photographs of the gardening activities or food conservation activities.

"9. The drawing department can make, on attractive sheets, the record of the school and community, as to what was raised in the drives for Liberty Loans, the sale of thrift stamps, the United War Work Campaign, etc.

"10. Records of four-minute speeches.

"These are merely suggestions. I would say, however, that photographs should comprise a large part of the collection, and I would suggest that some of the Sunday newspaper illustrated supplements be included. The case should contain in some appropriate manner, the names of the boys who made the case and of the teacher in charge.

"The work should be done between now and June, the time of the next high school commencement, when the case, covered with the flag, may be unveiled with appropriate ceremonies, and its contents briefly described, the whole affair being given the dignity which the subject warrants."

SCHOOLROOM HYGIENE AND SANITATION.

Cumberland, R. I. The success of dental inspection as conducted during the past year has made it practical to continue the work the next year.

Columbus, O. A campaign for funds has been begun with a view to the introduction of a dental clinic.

The A. L. Mills Open Air School at Portland, Ore., was opened with Mr. A. L. Mills as the guest of honor. The school has a daily schedule of classes and is fully equipped for open air classes.

San Antonio, Tex. A free dental clinic has been opened at the Green Memorial Hospital. The clinic takes care of the teeth of school children at the moderate price of five cents per child. The operators do not attempt expensive work but limit their activities to inexpensive fillings.

Kansas City, Mo. Thirty-two physicians have volunteered their services for medical inspections of school children. Each physician has been assigned one school and is given authority to exclude children with contagious disease or those exposed to infection.

A bill has been prepared for presentation in the Wisconsin legislature calling for the appropriation of funds for the introduction of medical inspection in the rural schools of Milwaukee County. It is estimated the cost to the county for this work will not exceed \$1 for each child.

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TRADE MARK

Makes Concrete Floors in Schools Dust-proof and Wear-proof

Your concrete floors should be truly sanitary, that is, free from dangerous concrete dust, hard, and non-absorbent, and therefore easily washed.

Students' health is injured by the sharp concrete dust which is continually ground up from untreated concrete.

The friction of walking or sweeping sends this dangerous dust flying throughout the schoolhouse. It settles everywhere and injures the varnish of desks, the clothing of pupils and affects their lungs.

Unlike ordinary street dust, this concrete dust is composed of silica, whose hard corners cut whatever they touch.

Lapidolith, the liquid chemical hardener, positively prevents the grinding up of this concrete dust, because it makes the floors as hard as granite.

Toilet Rooms Must Be Sanitary!

Untreated concrete floors cannot be kept clean. They are porous and absorbent and therefore the source of foul odors.

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We make the famous Wall Coating Sonotile, especially designed for classrooms, also Cemcoat for ceilings, walls and toilet rooms. They are hygienic, light-disseminating and washable. Write for literature.

Send for hardened concrete block and special school and college testimonials.

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A REPORT is worthless unless it is submitted in proper form. We manufacture report forms of all kinds including report forms from teacher to superintendent, teachers' daily reports, pupils' report cards, monthly reports, consolidated reports, and other report forms too numerous to be listed here.

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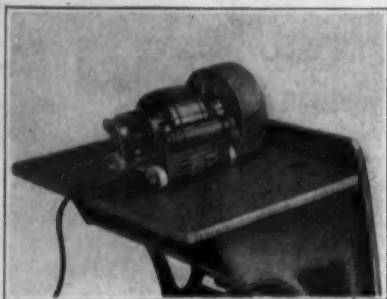
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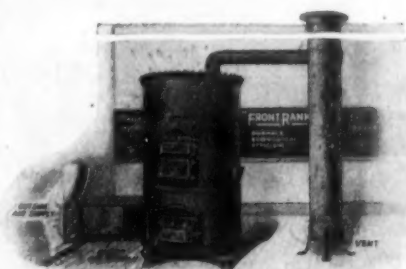
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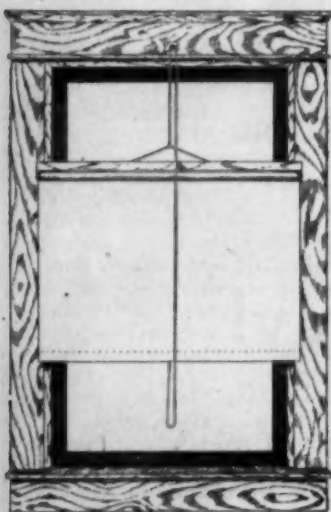


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NEW SALARY SCHEDULE FOR DETROIT.

Detroit, Mich. The board has adopted a salary schedule to cover the entire school system and to go into effect in September, 1919. The schedule is as follows:

Junior College Principal, \$1,000.00, in addition to the salary received as Principal of the Central High School.

High School Principals and Normal School Principal, maximum salary, \$5,000.00.

Junior High School Principals, maximum salary, \$4,000.00.

Elementary School Principals:

1. Schools of 28 or more rooms, maximum salary, \$3,600.00.

2. Schools of 22 to 27 rooms, inclusive, maximum salary, \$3,200.00.

3. Schools of 18 to 21 rooms, inclusive, maximum salary, \$2,800.00.

4. Schools of 14 to 17 rooms, inclusive, maximum salary, \$2,400.00.

5. Schools of 13 rooms or less, maximum salary, \$2,000.00.

Director of Manual Training and Domestic Art, maximum salary, \$5,000.00.

Supervisors, maximum salary, \$3,600.00.

Assistant Supervisors, maximum salary, \$2,000.00.

High and Normal Training Schools:

Assistant Principals, maximum salary \$3,500.00.

House Principals and Heads of Department, maximum salary, \$3,300.00.

First Assistants, maximum salary, \$2,800.00.

Second Assistants, maximum salary, \$2,600.00.

Third Assistants:

First year, \$1,100; second year, \$1,200; third year, \$1,300; fourth year, \$1,400; fifth year, \$1,600; sixth year, \$1,800; seventh year, \$2,000; eighth year, \$2,200.

Junior High Schools:

First year, \$1,100; second year, \$1,200; third year, \$1,300; fourth year, \$1,400; fifth year,

\$1,600; sixth year, \$1,800; seventh year, \$2,000; eighth year, \$2,200.

Elementary department:

Assistant principals, \$1,800.

Elementary teachers, first year, \$920; second year, \$1,020; third year, \$1,120; fourth year, \$1,220; fifth year, \$1,320; sixth year, \$1,420; seventh year, \$1,520.

University or college graduates holding academic degrees shall receive \$80.00 in addition to the above schedule.

Household Arts and Manual Training:

Teachers of Household Arts Department: Schedule is the same as that for elementary school teachers.

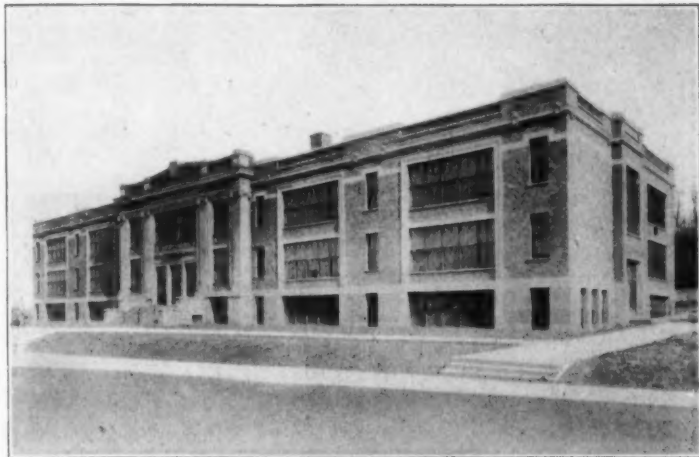
Manual training teachers of woodwork: Schedule is the same as that for Third Assistants in the high schools.

Kindergarten Department.

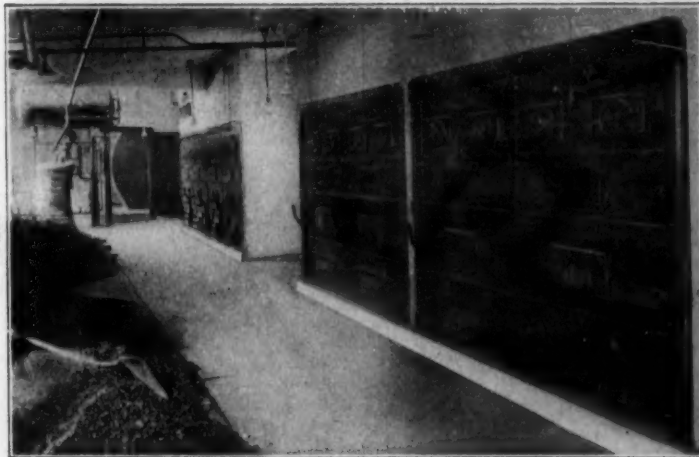
Kindergarten Assistants:

First year, \$920, second year, \$1,020, third

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Reprint from *The Allentown (Pa.) Call*, Jan. 5, 1918:

"The only building in the city which has not been forced to shut down is the Mosser Building" (shown above). "This building has the coldest situation of any of the buildings, and yet there are no cold rooms and all of the pupils are attending regularly."

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Auburn, Ind.

San Francisco, Calif.
Indianapolis, Ind.
Los Angeles, Calif.

Ft. Worth, Tex.
Saginaw, Mich.
Kansas City, Mo.

year, \$1,120; fourth year and thereafter, \$1,220.

Kindergarten Directors: Schedule is the same as that for elementary school teachers.

Teachers employed in the School for Deaf, Blind and Sub-normal shall receive a salary of \$200.00 per school year in addition to the regular schedule of salaries of the elementary teachers.

Other special teachers may, at the recommendation of the Superintendent, receive a salary of not to exceed \$200.00 in addition to the schedule for elementary school teachers.

Attendance Officers and Ungraded Teachers: Schedule is the same as that for Third Assistants in the high schools.

Clerks and Librarians in the high schools, excepting the Central High School:

Minimum salary, \$700, increases of \$100 to maximum of \$1,500.

Clerks in junior high schools and elementary schools:

Minimum salary, \$600, increases of \$100 to maximum, \$1,200.

Teachers in the elementary schools and kindergarten department doing double session work shall receive an extra compensation of \$1.00 per school day in addition to the regular schedule.

Experienced teachers coming from outside the city of Detroit may in the discretion of the Board of Education and upon the recommendation of the Superintendent receive an initial salary above the minimum depending upon the nature and amount of such experience.

In departments of the schools where experience other than teaching increases the efficiency of the teacher, the Board of Education at its discretion and upon the recommendation of the Superintendent may accept such experience as equivalent to teaching experience.

The salaries of teachers employed for special purposes not included in the above schedule shall be determined by the Board upon the recommendation of the Superintendent.

TEACHERS' SALARIES.

Wilmington, N. C. The schools of the city and county were conducted regularly during the "flu" epidemic with the aid of shorter sessions, daily inspections and the classes in home nursing as instructors in hygiene.



American Ideals.

Selected patriotic readings for seventh and eighth grades and for junior high schools. By Emma Serl and William J. Pelo. 159 pages. Price, \$0.90. Gregg Publishing Co., New York, Chicago.

This book which is intended for students of the seventh and eighth grades and junior high schools, seeks to give a clear idea of what love of country implies and to show the breadth of scope and the sentiment which are involved.

The text is made up of a collection of patriotic stories, poems, ballads and songs gathered from a wide source in American literature. Each selection serves as a piece of patriotic literature and at the same time offers the opportunity of learning much of a civic and historical nature. Among the well known authors quoted are Scott, Hale, Washington, Lincoln, Cooper, Hawthorne, Beecher, Carleton, Longfellow, Bryant, Holmes, Whittier, Howe, Kipling, Van Dyke and President Wilson.

The book is complete and well adapted for students in regular classrooms, for night classes in citizenship and for high school literary societies. It should readily find a place in the library of every school.

Foot-Power Loom Weaving.

By Edward F. Worst. Cloth, 211 pages. The Bruce Publishing Co., Milwaukee, Wis.

A supervisor of elementary manual training and construction work in Chicago is the author of this fascinating manual. His aim has been "to give to the amateur weaver the benefit of his experience in preparing the fibers, the warping, and the threading of the loom for plain weaving,

as well as learning to interpret and to execute the pattern drafts used in our own country and in other countries."

431 cuts show how warping is done, give all parts—even the very small parts—of a loom, and patterns upon patterns; patterns for maps, rugs, screens, pillow tops, curtains, footstools, counterpanes. Some patterns look simple, others look intricate, but all are pleasing. An entire chapter is devoted to the subject of dyeing different fabrics and different colors. A cover having the effect of a cloth fabric of dull blue, thick paper, printing that brings out the fine lines of the most intricate designs emphasizes the interest and beauty of this subject.

This book brings to mind an old attic. In it were cards for wool and flax, big wheel, little wheel, reel, swifts, loom. Time was when these were all in use. Busy and skillful hands wove woolen and linen cloth for personal and household use. Counterpanes of that period, indestructible in quality, elaborate in design, still exist. Much done then cannot and should not be revived; still this revival of handweaving will not only create a home industry, but will cultivate taste and develop originality.

Bryce on American Democracy.

Edited by Maurice Garland Fulton. Cloth, 388 pages. Price, 32 cents. Macmillan Company, New York.

As the latest edition of "American Democracy" came out in 1914 it is decidedly the most recent of a trio of famous books relating to American government and institutions.

Viscount Bryce brought to this work ability as an historian and a constitutional lawyer, an intimate acquaintance with the United States, and marked democratic sympathies. A careful reading of its contents will prepare young citizens for an intelligent understanding and fulfillment of their civic duties.

Progressive French Grammar—Part I.

By Frank A. Hedgecock. Cloth, 331 pages. Price, \$1.45. Isaac Pitman & Sons, New York.

This author holds positions of dignity and importance in England. In this book he has worked out his belief that any knowledge of a foreign language should at once be used in talk-

Do You Remember

the time when you had to stand in line and wait your turn for a drink from a rusty tin cup or dipper? Those days are past and the "old tin dipper" has been replaced by sanitary drinking fountains.



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ing and writing as well as in reading. The character, variety, length of the exercises, oral and written, express this opinion. As might be expected, some exercises are written in phonics.

Written and Spoken English.

By Erle E. Clippinger. Cloth, 563 pages. Silver Burdett & Company. Boston, New York, Chicago.

An unusual but truthful title, as all work centers upon the assignments for either oral or written English. Variety and originality mark the lists of assignments. The selections given as examples for themes are models of their kind. In connection with each lesson pupils are directed to prepare for recitation and discussion the exercises of a certain section in the body of the book. This advance lesson has a direct bearing upon the theme and may refer to the proper use of connectives, punctuation, some form of sentence structure.

It is perhaps a fault that the book is so large and that so much has been attempted.

School Efficiency.

By Henry Eastman Bennett. Cloth, 374 pages; illustrated. Price, \$1.25. Ginn & Co., Boston, Mass.

But few topics connected with school management have been left untouched in this volume. From the standpoint of comfort, health, educational value the opening chapters deal with school buildings, their lighting, heating, ventilation, housekeeping, and other topics relating to school hygiene. Then chapters on classroom organization, government, and community relations follow. Those upon reports to parents and the elimination of waste in teaching and study are highly suggestive.

The problems and reading lists at the end of every chapter, the prominence given to principles rather than specific examples, the clear style, the catholic breadth of thought found in "School Efficiency" make it worthy of close study.

The Use of the Kindergarten Gifts.

By Grace Fulmer. Cloth, 232 pages. Price, \$1.30 net. Houghton, Mifflin Company, Boston.

The psychologist will smile over the way in which basic principles of teaching have been applied to the use of kindergarten gifts. Many

teachers in secondary schools would do well to study and use their principles while teaching mathematics, science, history, language. All teachers wish so to direct the activities of their pupils that they will not only do the work of the day, but will grow in power of doing. If this be a goal for kindergarten work, is it not an equally fine goal for work in the higher grades?

As one reads chapter after chapter one agrees with the writer of the introduction that "if this book shall be limited in its influence to the kindergarten world, education will sustain a material loss."

Children's Plays.

By Eleanor L. and Ada M. Skinner. Cloth, 270 pages; with illustrations by Willy Pogany. D. Appleton and Company, New York.

Part of these bright plays are original, part are adaptations of some story, tale, poem, incident, legend. The talk and action are so thoroughly natural, these plays are capital for classroom reading lessons. The plot at the beginning of each play and the suggestions at the end of the book for players are helpful if original work in dramatization should be attempted.

Spanish Taught in Spanish.

By C. F. McHale. Cloth, 136 pages. Price, \$1.00. Houghton Mifflin Co., Boston, New York, Chicago.

There are usually exceptions to general rules. Here, the preface is in English. The introduction which explains the sounds of vowels, consonants, use of accent marks, etc., is also in English. But the thirty lessons are entirely in Spanish in these lessons homely, much-used matters of everyday life are handled thru questions, answers, exercises. A little space is allowed to some forms of courtesy and correspondence and to some facts in geography.

These carefully graded lessons give much practice of a practical character.

Composition and Rhetoric.

By Charles Swain Thomas. Will David Howe and Zella O'Hair. Cloth, 484 pages; illustrated. Price, \$1.20. Longmans, Green and Company, New York and Chicago.

Two educators, one from Massachusetts and

one from Indiana have achieved in "Composition and Rhetoric, Revised," a sound and scholarly textbook. In the selection and management of sub-topics the beaten path has been wisely followed as years of experience have demonstrated the importance of these divisions of composition. But the judicious proportions, the fitness and fullness of examples and exercises, the discriminating statement and discussion of principles disclose the taste and judgment of the authors.

A timely book which will give adequate training in the use of the English language.

World War Issues and Ideals.

By Morris Edmund Spears and Walter Blake Norris. Cloth, 12 mo., 461 pages. Price, \$1.40. Ginn and Co., Boston, New York, Chicago.

The sections of this book devoted to the issues of the war and democratic ideals of government bring together the best utterances of the strongest leaders and thinkers of these momentous times. The sections on the spirit of the warring nations and on American life and character are less fortunate. The editors have apparently disregarded the spiritual and religious reawakening that has come to the people and at least one of the authors quoted delights in a modern paganism that is contradictory to the real facts.

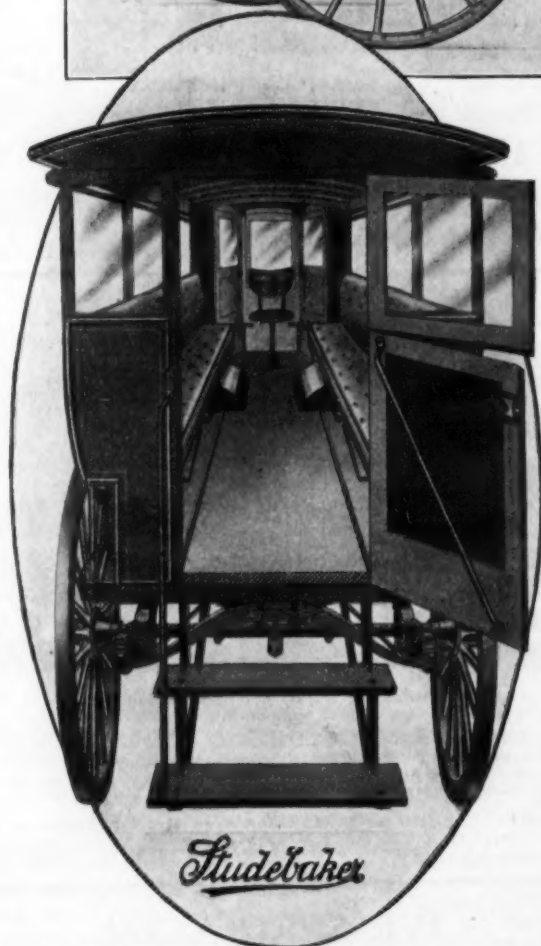
TEXTBOOK NEWS.

The Webster family of dictionaries has been enriched by the addition of a new abridged book, known as Webster's New Handy Dictionary. The work contains about 25,000 words and phrases and is intended for general school use. It is published by the American Book Co., in cooperation with the Merriams.

The Indiana State Board of Education has adopted two policies of considerable importance. One is the decision to select standard textbooks from which to teach industrial arts and home economics.

The other is to arrange for much earlier the annual meeting at which the commission adopts books for use in the schools of the state.

The Indiana State Legislature which is considering a bill providing for the printing of school books in the state prisons, has received a strong protest against the measure from the International Typographical Union.



Note the ease of access and the sanitary construction of the Studebaker Bus. This view also shows the cut-under feature of the wagon, individual driver's seat, 22-inch aisles, 13-inch cushions with high backs, divided rear door and dinner pail rail.

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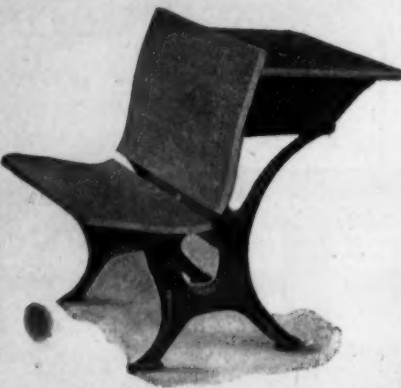
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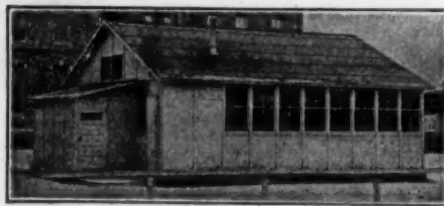
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Sectional and Portable School Houses

If you are in need of Portable School Houses why not get the best? School Boards in thirty-two states are using our houses. Can furnish references in any section. Investigate before buying. We guarantee our

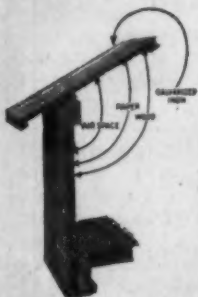
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to be dry, warm and sanitary, as well as thoroughly insulated, well ventilated and with double walls. Sold in any size, open air and two rooms when desired.

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We are equipped to furnish any size building on short notice. Prices of same depend on requirements and State Laws—but in every case are the lowest for quality of material supplied. Remember, this is not a cut lumber proposition, and the cost of erecting is a very small item. While not essential, as any unskilled labor can do it, we will, if you desire, arrange to erect all buildings. Buildings can be taken down and re-erected any number of times without marring a single feature.

We have made portable school houses for other people for over 25 years. Now you can buy Bossert School Houses with all our new patents and improvements direct from us and save money for your school board.

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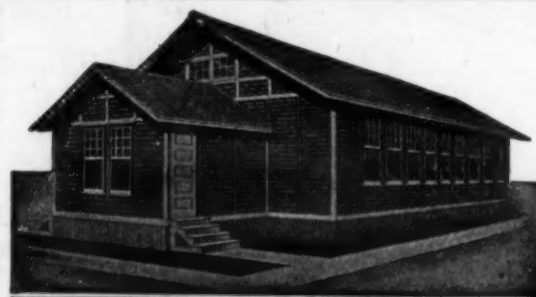
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REMOVE SCHOOL ASHES with G & G TELESCOPIC HOIST

the With Automatic Gear Shifting Brake Device and Silencer

There are five models of G&G Telescopic Hoists, with Automatic Gear Shifting Brake Device and Silencer, to meet the usual conditions; special models will be built to meet every unusual condition.

Models A and B cover requirements where the daily load does not exceed 20 standard cans a day. Model A raises filled cans from basement area to sidewalk. Model B is equipped with an overhead crane attachment which permits the cans to be raised from the cellar directly into the wagon, without rehandling at the sidewalk—a great accelerator of ash removing where it is possible for the wagon to drive up alongside of hatchway. Both of these models of hoists are operated by hand.

Where there is a large quantity of ashes to be hoisted daily, electrically operated G&G Telescopic Hoists are recommended. Three electric models from which to choose.

When not in use, G&G Hoists telescope below the sidewalk, and no part is visible from the street level. A few turns of the telescoping handle, however, raises hoisting head to its position over the hatchway. The entire work of raising and lowering filled and empty G&G Swing Bail Cans is done by the operator standing at street level. The Automatic Gear Shifting Brake Device allows the cans to be lowered with no movement of the hoisting handle, saving both time and labor.

SAFETY OF CHILDREN

and the general public from the dangers of an open hatchway is rendered certain when the G&G Telescopic Sidewalk Doors, with Automatic Closing and Opening Device and Automatic Spring Guard Gates, are used with the G&G Telescopic Hoist. Architects, School Board Committees, Building Superintendents and Chief Engineers should insist that these automatic safety devices be used with the G&G. They also eliminate dangerous, crude gratings and home-made guards frequently used when correct sidewalk doors are not installed, or when the antiquated, inefficient slow rope and pulley contrivance is retained for ash removal.

These G&G Automatic Sidewalk Doors, together with the other improved and patented automatic protective devices, are fully described and illustrated in our numbered catalogue, No. 100. We would like to tell you more about this practical work-saving and labor-saving system of clean, easy ash removal as it may apply in your case. Our Engineering Department is ready to furnish detailed information about any specific ash removal problem; you are invited to mention yours when writing for the catalogue.



1 man removes ashes from basement to sidewalk.

551 West Broadway
Sherbrooke, Que., Canada.

Established 1866

NEW YORK

Agencies in principal U. S. and Canadian Cities



1 man removes ashes from basement to wagon

GILLIS & GEOGHEGAN

WHAT TYPE OF HIGH SCHOOL BUILDING IS THE BEST ALL-AROUND INVESTMENT?

(Continued from Page 58)

of laboratory work. A large auditorium is very desirable but can hardly be justified economically unless the community concerned is in need of such for civic purposes. Its possession is vitally necessary if certain legitimate school activities are to be developed.

K. K. Tibbets, Superintendent City Schools, Gilbert, Minnesota.

Type D, in which study and recitation rooms are combined, is the one which most nearly conforms to my idea of an efficient school building for instruction in high school subjects.

The plan I should like to try, however, is as follows: I would not have a study room or assembly room of any kind other than the regular recitation rooms. Each of these rooms should provide for a seating capacity of 30 pupils, except that it might be well to provide a very small number of rooms with a seating capacity of only 15 or 20 pupils for such classes that might not be filled to the limit of 30 pupils. I would provide five recitation-study periods of 80 or 90 minutes each. All students would be required to prepare their next day's lesson under the supervision of the instructor who teaches that subject—the recitation to occur during the first half of the period and supervised study during the last half.

This will give each instructor five recitation-study periods each day, from about 8:00 a. m. to 4:00 p. m. Students will not remain in school during such times as they are not in one of these periods, unless of course they take an extra amount of industrial or academic work. Of course it will always be impossible for every class to have its full quota of 30 members, so there no doubt will be vacant seats in most of the rooms. Any student who has a vacant period may use one of these seats for study if he likes, or he may go home and study.

We have already started a program of this sort in our school. Our plans are not complete at the present time, but we are confident that we will be successful. It makes a longer day

for our instructors, that is true, but they do not object, for we have found that it is much easier to handle the work in this manner than it was under the old plan where each instructor taught five or six periods a day and also supervised a conglomerate assembly room one or two periods a day. We also find that our students are doing much better work. Our percentage of failures has decreased to a marked extent, and disciplinary troubles are reduced to a minimum, for we are able to keep our boys and girls busy. Many of our students get their lessons more quickly and thoroly under this plan than formerly.

A student who takes academic work exclusively has a six-hour school day, while one who takes a large amount of industrial work may have a seven or even eight-hour school day.

Our instructors have a seven-hour school day, and find that they can do most of their work within those seven hours and have more leisure than formerly.

C. C. Brown, High School Supervisor, State of Kansas.

Type D is suitable for schools operating on the supervised study plan.

QUALIFIED ENDORSEMENTS.

J. M. Gwinn, Superintendent City Schools, New Orleans, Louisiana.

In my opinion one room should be used for both study and instruction. The high school should stress teaching pupils how to do proper and independent study. The teacher will, under the plan, for a part of the period supervise the study of his pupils and during the remaining portion of the period conduct the recitation with the same pupils. This plan will necessitate a longer period than now prevails—one not less than sixty and possibly eighty minutes in length. The size of the study-recitation rooms should be determined by the number of pupils the teacher can successfully supervise and instruct at one time and also by the number of pupils taking the various courses and subjects. Not all classrooms should be the same size. A number of small rooms should be provided where conditions warrant, for example, the third or fourth year classes in foreign languages or in other subjects where the number of pupils per class is small.

A library with a fair size study room adjacent should be provided for pupils whose study requires them to use the library. Assembly hall which may be a gymnasium should be provided with the lower or main floor of same easy of access from outside as well as from inside of the building.

E. C. Zabriskie, Prin. Washington Irving High School, New York City.

As regards type D, I believe that the recitation rooms with a seating capacity of thirty-five pupils may economize teachers. It may not be possible, however, for each teacher to have his own room. This type of building would probably be necessary for a double session school. There would have to be a lunchroom or an auditorium which might be used for study for extra pupils.

H. V. Hotchkiss, Superintendent City Schools, Akron, Ohio.

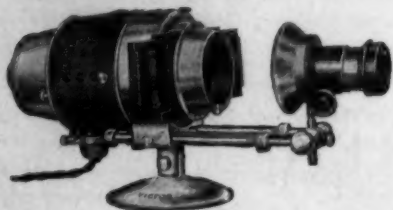
Any schoolhouse must be planned and erected to meet the conditions, in the particular community where it is placed. Different schools have different courses of study and different systems of organization and administration. The type of construction, as suggested herein, must be made to suit both the courses of study and the plan of organization and administration. In our city, we do not believe in the "Study-Room Recitation Room" plan of organization. We believe that pupils should be assigned to school rooms, about 40 pupils to the room; that the teacher in charge of the room should teach every pupil (so far as possible), at least one subject; that the pupils in that room will go to other rooms to recite their other subjects, or a teacher from some other room will exchange with the room teacher, in order that the other teacher may give instruction to the pupils seated in that particular room.

It does not follow that the amount of floor space and the number of seats, by this system of organization, will be greatly in excess of the area and number of seats necessary by the "Study-Room Recitation-Room" plan. It is possible that a few more seats will be required. On the other hand, schoolhouses are not constructed,

(Concluded on Page 93)

TEACH BY PICTURE

The value of the picture screen has now been so thoroughly proven that there is no longer any doubt by any Educator concerning the need for a Stereopticon in every school room. And during this period of "Education of the Educator" to the picture screen idea:—



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has at the same time proven its right to its several claims for superiority. If your schools are not already equipped write for trial terms today.

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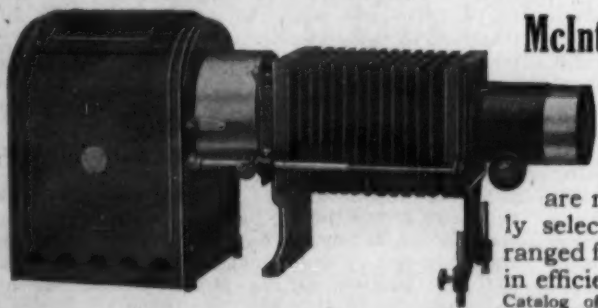
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cover every subject in your curriculum and are most carefully selected and arranged for real value in efficient teaching. Catalog of any subject for the asking.

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The country's leading educators, realizing and appreciating the power and scope of motion pictures for educational purposes, and desiring unlimited use of this great pedagogical aid, have—after careful investigation—adopted the DeVry Portable Motion Picture Projector as being ideal for the purpose.

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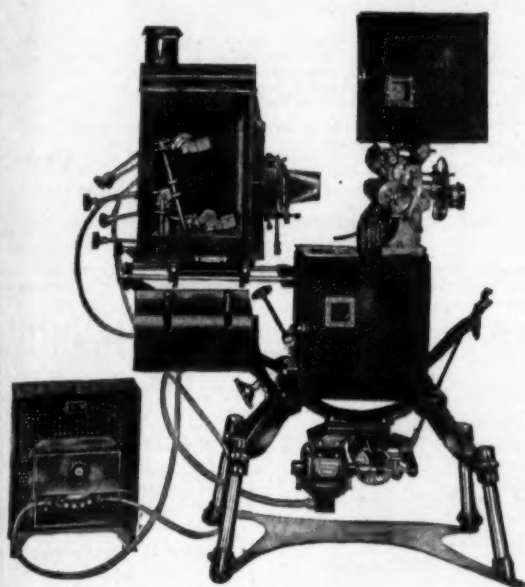
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INCORPORATED

90 Gold Street

Pioneers of Projection

NEW YORK, N. Y.

(Concluded from Page 91)

primarily, to save seats, but to give effective instruction.

E. R. Edwards, High School Inspector, State of North Dakota.

Type D provides for possibly the least formality in schoolroom discipline, but requires pupils to carry about their books and papers and for a good part of the day robs them of any real seat residence. It is economical in floor space.

ADVERSE COMMENT.

Wm. H. Eddy, Supt. City Schools, Providence, Rhode Island.

Type D is not elastic enough. Pupils would be wandering about trying to find a place to study, unless very ably directed.

L. A. Mahoney, Superintendent City Schools, Moline, Illinois.

In an effort to economize space and number of seats, this type increases the problems of discipline and administration. It seriously impairs the teaching to impose on the instructor the responsibility of watching a study group. There will always be teachers with vacant periods to supervise a study hall.

Paul C. Stetson, Prin. South High School, Grand Rapids, Michigan.

Type D should be rejected, because it provides for no study room, but rather makes the recitation room teacher the session room teacher of a certain group. While this is an economical plan of organization, it means, nevertheless, that high school students will be deprived of that close supervision by a specially trained teacher who has not to exceed three classes a day. We believe that such supervision is absolutely essential.

W. I. Early, Prin. Washington High School, Sioux Falls, S. Dakota.

Type D would be desirable only when there were not sufficient funds to have regular study rooms. Shifting from room to room for study purposes will not permit of the stable organization that a school should have.

Leonard Young, Principal Central High School, Duluth, Minnesota.

From the fact that pupils in a type D school

will do the greater part of their studying in school in rooms in which recitations in other subjects are being conducted, this type is far from desirable. Such a combination is a distraction to both pupils and teachers. Attention is necessarily divided between recitation and study by every one in the room.

Charles S. Clark, Supt. City Schools, Somerville, Massachusetts.

My experience has been wholly with type D. I recognize the disadvantages of this plan, and would favor a plan with larger rooms providing for both study and recitation in addition to regular recitation rooms.

W. E. Stearns, Prin. Barringer High School, Newark, New Jersey.

I do not believe in a combined study and recitation room. I have never found it to work well at all. It is annoying and disturbing to both the class in recitation and to the pupils studying. A study room for that purpose only that will hold eighty to one hundred pupils adds to the elasticity of the program, and I find it very useful. Larger than that is difficult to handle. If one has to use teachers that "happen" to be free on a particular period. A study room teacher skillful in discipline of course, would be all right, but it is stupid work and not many would care to undertake that alone.

Frederick E. Emmons, Prin. Battin High School, Elizabeth, New Jersey.

The divided attention of the poor teachers, from instruction to discipline, and the divided attention of pupils from study to instruction, make this plan subversive of good discipline and a waste of pupils' time.

T. S. MacQuiddy, Superintendent City Schools, Watsonville, California.

Type D represents the earliest form of American high school buildings. They are a development of the typical grammar building rather than of high schools. In economy of floor space they easily surpass all other types, but this is all that can be said to their advantage. Schools organized on the plan of double periods, a recitation period followed by a study period for all subjects can use such buildings without great

disadvantage, but such time schedules have not proven best for upper high school grades. Buildings of this type do not lend themselves to unity of school or of class. With the more common time schedules, teachers must all supervise the study of pupils not in their own section, which work to most teachers, is unpleasant. Pupils are put to a disadvantage thru a lack of constant study conditions. The double nature of the teachers' work, the varied study conditions of the pupils, and the lack of unifying influence all tend to demoralize discipline and make for many other serious administrative difficulties.

J. E. Marshall, Prin. Central High School, St. Paul, Minnesota.

Type D may be a necessity in some of our larger high schools because of the rapid growth of the school population. It is, however, to my mind vicious, as no teacher can do her best work, nor can a study pupil concentrate with such a mixture.

W. E. Faught, Superintendent City Schools, Modesto, California.

In type D service is sacrificed to economy.

The contributions made by the educators above quoted are significant since they show to a greater degree than some others the extent to which the building itself actually affects the plan of school organization. This type of building is favored by ten high school principals, six city superintendents and one high school inspector. It receives the qualified endorsement of one high school principal, two city superintendents and one high school inspector. Opposed to this type are eight high school principals and five city superintendents. To those opposed there should really be added ninety educators who have expressed a preference for some other type but have not commented adversely upon this type. This number includes fifty-five high school principals, twenty-three city superintendents and twelve high school inspectors.

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THE CAXTON SIDE BOUND ERASER

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CHADSEY GOES TO CHICAGO.

Charles E. Chadsey, superintendent of schools of Detroit, Mich., for the past nine years, has been elected to the superintendency at Chicago, Ill., at a salary of \$18,000. Supt. Chadsey was given time to finish up his work at Detroit and took up his duties in the early part of March.

Charles Chadsey was born in Nebraska and received his early training and education in the elementary and secondary schools of that state and later attended Stanford University, graduating in the class of 1892. He attended Columbia University in 1894 and received the degree of Ph. D. in 1897.

He became principal of the Durango, Colorado, high school in 1894 and in 1897 was promoted to the superintendency which he continued to fill until 1900. He then served successfully as superintendent of the North Side schools of Denver from 1900 to 1903, assistant superintendent from 1903 to 1907, and superintendent from 1907 to 1912.

In 1912 there was a vacancy at Detroit and Dr. Chadsey was chosen from a large list of available men. In this position he holds a splendid record in the direction of the educational activities of a great industrial city.

Dr. Chadsey, in addition to his work as an administrator in the school field, has won a reputation as a lecturer and author. He is the author of a number of articles which have appeared in various educational magazines. He has been an active worker in the deliberations of the National Education Association and was president of the Department of Superintendence of that body from 1911 to 1912.

PERSONAL NEWS OF SUPERINTENDENTS.

Supt. Herbert M. Slauson of Ann Arbor, Mich., has resigned.

C. R. Rounds, of the Milwaukee Normal School, has gone to France as a member of the faculty of the Overseas Educational Commission.

Protect the Health of the Children

If the children in the classroom should be bright and cheery the heat must be uniform and the ventilation just right.

Heating and Ventilation are two important factors in the school room. If the air in the school room is foul and ventilation poor, disease is almost inevitable.

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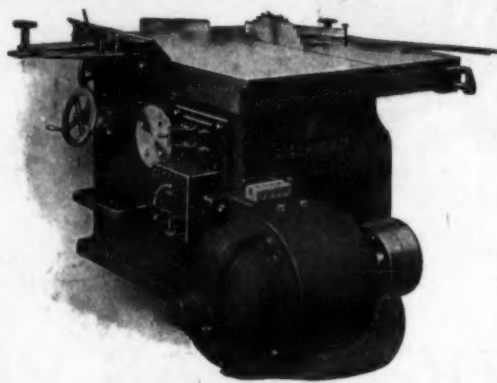
will keep the room fresh with pure air, yet warm and comfortable.

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American Wood Working Machinery Co.

591 Lyell Ave., Rochester, N. Y.

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especially adapted for schoolhouse work.

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3rd. The Holder Arm attachment for holding a door open is automatic, a child can operate it—just a push or pull on the door is all there is to do to it. Every schoolroom should have one.



Approved by the National Board of Fire Underwriters Laboratories

THE NORTON DOOR CHECK CO., 904 W Lake St., CHICAGO, ILL.

Supt. P. P. Colgrove of Virginia, Minn., has been re-elected for his sixth term.

Supt. O. C. Pratt of Spokane, Wash., has been re-elected for a three-year term, with a salary of \$5,400.

State Supt. S. W. Sherrill of Tennessee has declined renomination for the office of Superintendent of Public Instruction. Mr. Sherrill has filled the office for the past four years, and previous to his appointment was head of the Department of Psychology and Methods at the East Tennessee Normal School.

Benjamin Ide Wheeler, president of the University of California, has announced his resignation, to be effective July 15th. President Wheeler leaves the University at this time because he has reached the age of retirement and also because he has completed twenty years of service.

The school board of Woonsocket, R. I., has asked that the salary of the superintendent be raised from \$3,000 to \$3,500.

SERVICE unparalleled in the history of Motion Pictures, selecting and exhibiting 30,000,000 feet of film a week for the American Army and Navy and for the Allies, is now available to meet the needs of any group in any community.

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SELECTED FILM SERVICE
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Procedure

1. Before starting service for any subscriber, the Community Motion Picture Bureau makes careful study of its particular needs, and builds a series of programs definitely to fit those needs.

2. The Bureau correlates educational programs with standard text books, and gives pedagogical directions for the use of such programs, prepared by the best educators in the country.

3. The Bureau's professional editorial staff views all films produced in America, United Kingdom and France, giving the slightest promise of value; it selects, analyzes, classifies and makes available those films which are best suited for community purposes. It views a million and a half feet of film a week, and selects the few tens of thousands that meet its exacting standards. If no film exists covering a community need, the Bureau supplies the gap. The Bureau's news weekly, "The World Today in Motion Pictures," is distinctive.

4. The Bureau's distributing organization with forty different offices moves with the absolute precision which makes certain that all programs reach their destination on time.

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6. The Bureau acts continually as the friend and counsel of the subscriber, in every way helping him, through the intelligent use of motion pictures, to meet his problems for the good of the community. This service includes such small but necessary aids as notification, in detail, of what program will be sent, when it should be received, shipping labels, exact shipping instructions, annotation, with advertising material, directions for proper music, stereopticon slides rounding out the program and filling the interval between reels.

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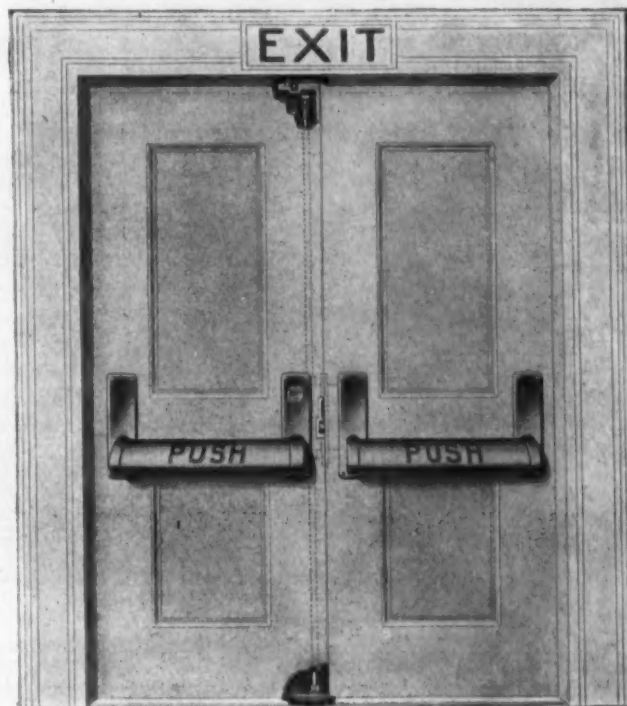
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are attractive in appearance, strong in construction and quick in action.

They have a wide push bar which projects only 2½ inches from the surface of the door, permitting the door to swing wide open so as not to obstruct passage through the doorway. Slight pressure on the bar at any point will release the bolts instantly. All edges and corners on the bars and brackets are carefully rounded, eliminating all possibility of wearing apparel becoming accidentally caught.

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Commercial man desires position for September opening as director city high school commercial department. Can also train grade teachers in penmanship. Seven years successful experience in this live combination in Keokuk. Address: Arthur Gill, B. Acc't, High School, Keokuk, Iowa.

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sent free to anyone interested in the subject. Write for your copy today. Fred Medart Mfg. Company, Potomac and DeKalb Sts., St. Louis, Mo.

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ering our school furniture. Send for yours today. Illinois Refrigerator Co., Morrison, Ill.

Pencil Catalog—Write for your copy today. Jos. Dixon Crucible Company, Dept. 31-SJ, Jersey City, N. J.

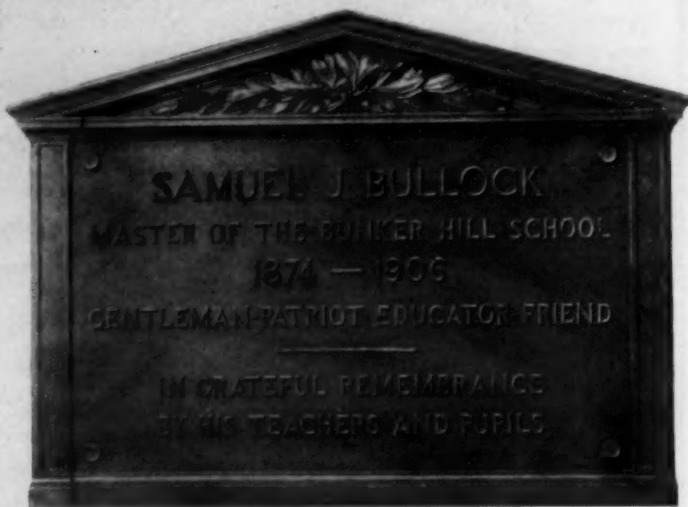
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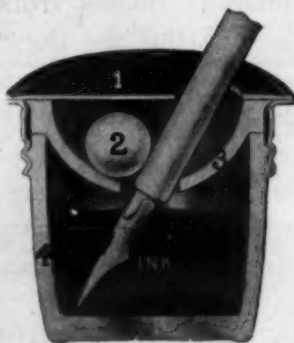
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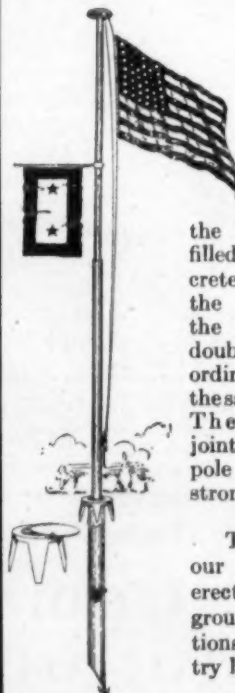
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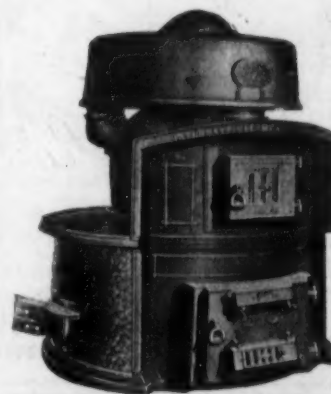
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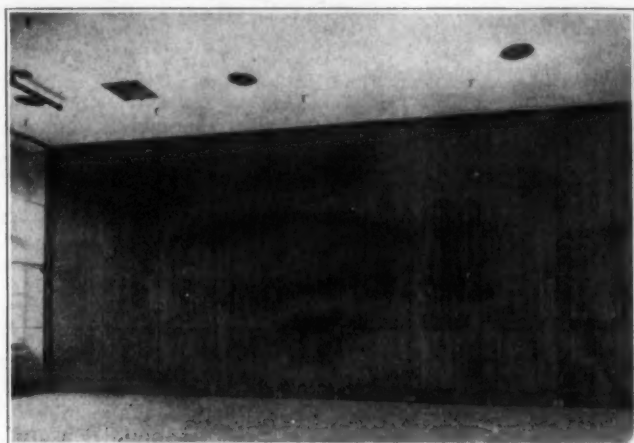
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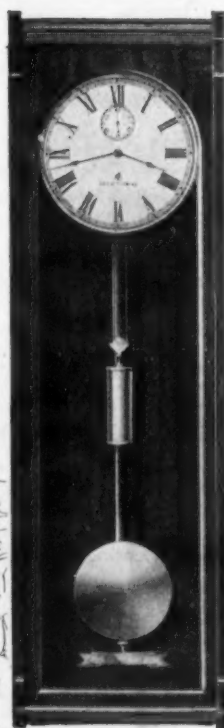
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AFTER THE MEETING



A Steam-Heated Ocean.

A fourth-year class was beginning the study of ocean currents.

"Why is the ocean warmer in some places than it is in others?" asked the teacher.

The children were puzzled. Finally Alexander, a bright little lad of seven years, volunteered this original explanation:

"Because it is steam heated in some places," said he. "You see, where the big steamships pass thru the ocean the water is steam heated, and thereby very much warmer than the places where no steamships pass."

A teacher in a lower grade was instructing her pupils in the use of the hyphen. Among the examples given by the children was the word "bird-cage."

"That's right," encouragingly remarked the teacher. "Now, Paul, tell me why we put a hyphen in 'bird-cage.'"

"It's for the bird to sit on," was the startling rejoinder of the youngster.—The Delineator.

Good Reason.

A school board member in Chicago who recently resigned is quoted as saying: "It feels queer to be able to say once more that I am a man of peace."

In Iowa.

An Iowa rural principal recently received the following card from the local express agent:

Sir: Please send at once for the case of school books addressed you. Charges, \$1.68.

P. S.—Case is leaking badly.

Equipped to Be a Hero.

"Why did you name your boy Herbert Fitzroy James?"

"Because I wanted him to be a fighter. I figure that in our neighborhood a boy named Herbert Fitzroy James has got to fight."

Didn't Dislike Her, But—

"Why do you dislike your teacher so, Willie?" asked his mother.

"I don't exactly dislike her, mother," replied Willie, "but it's perfectly plain to me why she never got married."

"Johnny Jones," said the school teacher, impatiently, "what is it you are fidgeting with?"

Johnny did not reply, but the class sneak was ready as usual with the information.

"Please, teacher," he said, "it's a pin he's got."

"Take it away from him and bring it here," was the next command. And the offending pin was brought. There was no more trouble from Johnny until his turn came to read, and then instead of standing up the poor little fellow made no sign, except that two big tears rolled down his cheeks.

"Why don't you go on with the reading?" cried the teacher. "If you don't I shall have to make an example of you."

"P-please, mum," whimpered Johnny, "I-I can't stand up. That pin you took ke-keeps me trousers up."

In These Days of War.

"And this," said the teacher, "is the rhinoceros. Look carefully at his armored hide."

"I see," said the bad boy of the class. "An' wot's this one?"

"That," answered the teacher, "is a giraffe."

"Gee! He's got a periscope."—Ladies Home Journal.

The teacher was taking his class in a mental arithmetic lesson. After "tables" had been repeated he commenced giving a series of mental sums, and presently asked an intelligent little Scot:

"How many marbles would you get if I gave twenty to be divided between you and Johnny McGregor?"

After a moment's hesitation, the youngster answered:

"I canna tell, sir."

"How's that?" queried the teacher.

"Weel, sir," said he, "ye see, it's a' accordin'. If ye gie 'em when we're both here, we'd hae ten each; but if ye gie 'em tae Johnny when I wasna present, I'd on'y get about five; while if ye gie 'em tae me tae share oot when Johnny wasna here, I dinna ken whether he'd hae only at a'!"

THE LITTLE RED SCHOOLHOUSE.

Frances Wright Turner.

I've been around about the world
And seen the best and worst
I've knocked about, with men and things
I've laughed, and cried, and cursed.
But there's one thing I remember,
When all is done and said,
And that's my care-free boyhood days
In the schoolhouse painted red.

'Twas in the old Green Mountain State
Where hearts are warm and true,
As those old hills against the sky,
The green against the blue.
Tho I've wandered very far away,
My love is not all dead,
There's one big corner in my heart,
For the schoolhouse painted red.

And now the fire's growing dim,
The coals are getting low,
And memories creep about me,
While I watch the fading glow.
There's one great longing in my heart
Before the fire's dead,
To wander back and see once more
The schoolhouse painted red.

I seem to see the battered seats,
The worn and knotty floor.
I wonder if the golden-glow's still
Growing by the door—
The shadows—how they deepen,
Round my fast graying head—
If you're still there, God bless you,
Little schoolhouse painted red.

Dangerous Beasts.

The teacher had been telling her class about the rhinoceros family. "Now name some things," she said, "that are very dangerous to get near to, and that have horns."

"Automobiles!" promptly answered Johnny.—Harper's Magazine.

An Irish school inspector was examining a class in geography. Having received a correct answer to a question regarding longitude, he next inquired:

"Now, what is latitude?"

Replied the bright-eyed youngster undergoing the ordeal, with a merry grin:

"Please, sir, we have no latitude in Ireland. I've heard father say that the British government won't allow us any."

Willy's teacher was Christian Science as you will see.

Teacher: "Willy, why weren't you at school yesterday?"

Willy: "My father was sick."

Teacher: "No, your father wasn't sick, he just thought he was."

Teacher (after Willy had been absent for a week): "Why weren't you at school last week?"

Willy: "We thought my father was dead, so we buried him."

The teacher had sketched on the blackboard what purported to be a deer. As the class did not readily respond to the request to reveal the identity of the animal the teacher sought to prompt them.

"Now, Tommy," she said, turning to the boy at the bottom of the class, "come, what does your father call your mother?"

"Garn," came the reply; "you can't kid me that's an old cat!"



The Difference in the Sexes.

Young Johnny had been reading the evening paper, and paused contemplatively for a few moments. "Father," said he, "what is 'inertia'?"

"Well," replied the father, "if I have it, it's pure laziness; but if your mother has it, it is nervous prostration."

BUYERS' NEWS COLUMN

"BUY IT NOW."

The United States Council of National Defense, composed of the Secretaries of War, Navy, Interior, Agriculture, Commerce and Labor, has begun a nation-wide campaign urging the people of the country to buy only what they need, but to buy it now.

There is a great volume of business waiting to be done in America. Private stocks of all kinds are low. The country's means are ample, and when the full flow of private buying begins there will be business for all. But it may take several months to bring this about, and action is needed now.

Our commerce rests upon the personal purchases of individuals. If all were to stop buying, there would be no business. It is called good business to delay buying until the market reaches bottom. If economic law alone were now concerned that would be right action. But there is directly involved at this moment the saving of men from unemployment and the social consequences to them and to the country.

There must be no waste. We must still save. Taxes are now coming and there soon will be another loan. The middle course that the council urges is: Buy only what you need, but buy it now.

If this course is followed, commercial springs of action will be tapped and a real danger averted.

Grosvenor B. Clarkson,
Director of the U. S. Council
of National Defense.

ISSUES CATALOG.

The Joseph Dixon Crucible Company has just issued a new complete catalog of Dixon pencils which are adapted especially for school use. The catalog is a remarkable example of fine printing and has been compiled with a distinct educational purpose in mind.

It proposes to suggest pencils for special types of school work and it succeeds fully in its purpose. Copies will be sent to any school authority on request to the educational department, Joseph Dixon Crucible Company, Jersey City, N. J.

PICK ISSUES NEW CATALOG.

The Albert Pick Company, Chicago, has just issued its new catalog on janitor and office supplies for schools, office buildings, factories and public institutions. The firm has a large wholesale stock of goods and enjoys an extensive trade in supplies of all kinds for large institutions.

School board secretaries and purchasing agents who are interested in the purchase of supplies for the schools may obtain a copy of the catalog by addressing Albert Pick Company at 208 W. Randolph St., Chicago.

SHORTHAND IN THE HIGH SCHOOLS.

At the Pittsburgh meeting of the N. E. A., Mr. David H. O'Keefe, Librarian of the Department of Business Education, presented some very interesting statistics on the growth of shorthand in the high schools of the country during the past 35 years.

According to the report of Julius Ensign Rockwell, in the circulars of information issued by the Bureau of Education in 1884, shorthand was at that time taught in only ten high schools in the United States. According to the 1918 report, shorthand is taught in 2,023 high schools. The systems represented are as follows:

Gregg	1,524
Benn Pitman	189
Isaac Pitman	60
Graham	44
Munson	23
Barnes	20
Chandler	19
Anderson	5
New Rapid	4
Paragon	4
Stenotypy	4
Others (two-thirds Pitmanic)	128

Total.....2,023

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Armstrong Co., The.....	90	N. J. School Furn. Co.....	17
Austral Window Co.....	4th Cover	Newson & Co.....	82
Automatic Pencil Sharp. Co.....	82	N. Y. Silicate Book Slate Co.....	23
Badger Brush Company.....	82	Norton Door Check Co.....	94
Bausch & Lomb Optical Co.....	76	O'Brien Varnish Co., The.....	70
Beardslee Chandler Mfg. Co.....	6	"Old Glory" Mfg. Company.....	90
Beaver Board Companies, The.....	5	Oliver Machinery Co.....	6
Berger Mfg. Co., The.....	4 & 68	Palmer Co., A. N.....	24
Betsy Ross Flag Co., Inc.....	70	Palmolive Co., The.....	98
Bielefeld & Co., Otto.....	23	Payne Company, F. S.....	11
Billings-Chapin Co.....	62	Peabody School Furn. Co.....	90
Binney & Smith Co.....	18	Peckham, Little & Co.....	96
Bossert & Sons, Louis.....	90	Peerless Unit Vent. Co.....	94
Cabot, Samuel.....	4th Cover	Penna. Structural Slate Co.....	1
Caxton School Supply Co.....	94	Perennial Shade Co.....	74
Central City Chemical Co.....	23	Peterson & Co., Leonard.....	62
Central Scientific Co.....	82	Pick & Co., Albert.....	79
Channon Co., H.....	12	Pitman & Sons, Isaac.....	82
Chicago Flag & Decorating Co.....	90	Power Co., Nicholas.....	93
Christiansen, C.....	1	Premier Eng. Co.....	8
Clow & Sons, James B.....	69	Putnam's Sons, G. P.....	78
Columbia Graphophone Co.....	65	Qualint Art Furniture Co.....	20
Columbia School Supply Co.....	38	Roberts & Meek.....	36
Commercial Paste Company.....	62	Robertson Products Co., Theo. B.....	84
Community Motion Picture Bureau.....	96	Ronald Press Company.....	82
Cotrell & Leonard.....	23	Rowles Co., E. W. A.....	19
Dettra & Co., Inc., John C.....	70	Rundle-Suence Mfg. Co.....	83
Devoe & Reynolds Co.....	10	Russell & Sons Company, Albert.....	96
DeVry Corp., The.....	92	Sargent & Co.....	96
Dixon Crucible Co., Jos.....	66	Sengbusch Self-Closing Inkstand Co.....	18
Draper Shade Co., Luther O.....	74	Sheldon & Co., E. H.....	12
Dudfield Mfg. Co.....	98	Silver, Burdett & Co.....	82
Durand Steel Locker Co.....	63	Smith System Heating Co.....	82
Edison Electric Appliance Co.....	66	Sonneborn Sons, L.....	85
Educational Equipment Co.....	97	Snellenburg & Co., N.....	29
Educational Publishing Co.....	98	Spencer Lens Company.....	79
Empire Seating Co.....	2nd Cover	Spencer Turbine Co.....	8
Enterprise Optical Mfg. Co.....	92	Squires Inkwell Co.....	96
Esterbrook Steel Pen Co.....	18	Standard Conveyor Co.....	8
Faber Co., Eberhard.....	68	Standard Electric Time Co., 4th Cover	90
Federal Equipment Co., The.....	12	Steel Furniture Co.....	90
Federal Steel Fixture Co.....	23	Steele Mfg. Co., Oliver C.....	86
Gillis & Geoghegan.....	60 & 91	Studebaker Corp.....	89
Gregg Publishing Co.....	24	Superior Seating Co.....	21
Hamilton Manufacturing Co.....	86	Thomas Clock Co., Seth.....	99
Hartshorn Co., Stewart.....	74	Totbill, W. S.....	98
Haynes-Langenberg Mfg. Co.....	96	Underwood Typewriter Co.....	82
Heath & Co., D. C.....	9	Underwood & Underwood.....	64
Heywood Bros. & W. Co.....	20	Union School Furnishing Co.....	93
Holden Patent Book Cover Co.....	61	United Electric Co.....	18
Hygienic Products Co., The.....	1	U. S. Inkwell Co.....	18
Hillins Refrigerator Co.....	20	University of Chicago Press.....	23
International Heater Co.....	97	Victor Animatograph Co.....	93
Jackson Piano Company.....	71	Victor Talking Machine Co.....	59
Keenan Struct. Slate Co.....	1	Virginia School Supply Co.....	94
Kewanee Roller Co.....	84	Vonnegut Hardware Co.....	9
Kewanee Mfg. Co.....	62	Walger Awning Co.....	74
Landis Eng. & Mfg. Co.....	99	Wayne Works, The.....	9
Lippincott Co., J. B.....	78	Waywell Chappell & Co.....	98
Longmans, Green & Co.....	78	Weber Castello Co.....	15
Lynn Co., James.....	98	Welch Mfg. Co., W. M.....	99
Lyon Metallic Co.....	6	West Disinfecting Co.....	97
Macmillan Company, The.....	78	Williams & Son, Inc., C. F.....	60
Manifold Manufacturing Co.....	68	Williams, Inc., John.....	98
McFarland-Hyde Co.....	67	Wilson Corp., Jas. G.....	99
McIntosh Stereopticon Co.....	92	Wolf Mfg. Co., L.....	99

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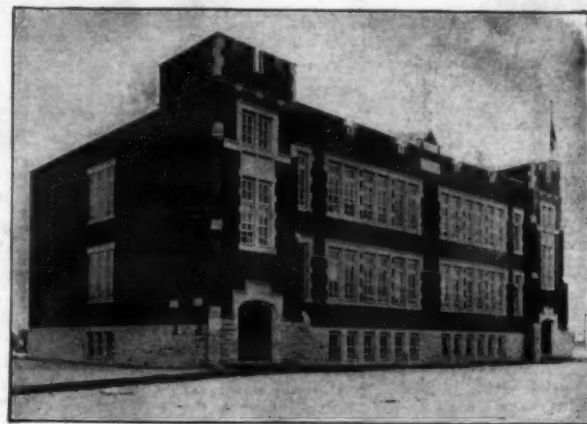
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